The New England
Journal of Medicine

VOLUME 215 OCTOBER 29, 1936 NUMBER 18

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY

Municipal Auditorium, Springfield, June 8, 1936

PRESIDING:
Dr. Charles J. Kickham, Brookline, Chairman.
Dr. Raymond S. Titus, Boston, Secretary.

CHAIRMAN KICKHAM: We will call the meeting to order, gentlemen. After talking the matter over with the Secretary and also with the gentlemen who are going to read papers, it has been decided that we will reverse the order of procedure by having Dr. Schumann's paper second instead of first. May I say that we are happy to have as large an audience as we have here today. We know that those who are attending will go away with most worthwhile information from these various gentlemen. As this will mark the termination of my activities as Chairman of the Section, I wish before the meeting starts, to express my appreciation of the hard and earnest cooperation of the Secretary, Dr. Titus, as well as that of Dr. Bowers of the *Journal*, for his constant cooperation and suggestions in regard to the column. As all of you gentlemen know, it is the only Section of the Massachusetts Medical Society—in fact, it is the only Section that I know, of any Medical Society in the country—that functions throughout the year. We carry on not only by having talks from time to time before various medical societies, but there is a column printed in the *Journal* every week under our auspices, carrying papers that are written by individuals who have given a good deal of thought to the particular subject discussed, so that we really all get a Postgraduate Course in Obstetrics and Gynecology. This year I went before the Commit tee on Finance and they very kindly consented to give us sufficient funds to print the various articles that have been published from October to June and these are in pamphlet form and will be distributed free, of course, to the doctors present. I think it will be well for those who receive them to keep them because you can refer to them, I know, with great pleasure and also with profit in the year to come. If you have a particular friend who is not here, who would like one, we shall be glad to have you take two in order that he or she may have one. We will now proceed with the meeting.

The first paper this afternoon will be "Menorrhagia and Metrorrhagia of Benign Origin in Women Under Forty-Five Years of Age, with a Plea for More Conservative Treatment." The paper will be presented by Dr. Frederick L. Good of Boston, Professor of Obstetrics at Tufts College Medical School, Surgeon-in-Chief, Boston City Hospital and Gynecologist, St. Elizabeth's Hospital.

MENORRHAGIA AND METRORRHAGIA OF BENIGN ORIGIN IN WOMEN UNDER FORTY-FIVE YEARS OF AGE, WITH A PLEA FOR MORE CONSERVATIVE TREATMENT*

BY FREDERICK L. GOOD, M.D.†

THE title of this paper as listed in the program is "Menorrhagia and Metrorrhagia of Benign Origin in Women Under Forty-Five Years of Age, with a Plea for More Conservative Treatment." I have taken the liberty, however, to discuss the subject without any age limit, realizing that menorrhagia and metrorrhagia are frequent and troublesome symptoms in women beyond the age of forty-five years.

If there is a prolonged or a profuse flow at the time of a menstrual period, the condition is called menorrhagia. If the flow is between the periods, the condition is called metrorrhagia. One is very apt to suffer from menorrhagia and metrorrhagia if there exists a hyperplasia of the endometrium. A good and simple definition of "hyperplasia" is that it is "an overgrowth of a part due to a multiplication of its elements." I feel that there will be a better understanding of this subject if one bears in mind these simple definitions.

Of late, much has been written about the treatment of menorrhagia and metrorrhagia by hormones and anyone who takes the time to read will quickly find out that there is no unanimity of opinion as to the therapeutic value of the various hormone preparations. I feel that the greatest advance in gynecology during the past few years has been along the lines of endocrinology and that many of our unsatisfactory results may have been due to the fact that we have been using hormones indiscriminately, and have not made, in many instances, the necessary laboratory studies before advising hormone treatment. I feel, too, that many clinicians have taken altogether too much for granted and clin-

*Read at the Annual Meeting of the Massachusetts Medical Society, Section of Obstetrics and Gynecology, Springfield, June 8, 1936.

†Good, Frederick L.—Professor of Obstetrics, Tufts College Medical School. For record and address of author see "This Week's Issue," page 845.

ically have gone farther with the use of various hormones than laboratory work actually warrants. A good rule to follow is to keep pace with the laboratory worker and not to take anything for granted until the laboratory has been able to prove definitely the efficacy of a particular hormone in a particular condition.

It is safe to say that if a patient complains of flowing at her regular period for a longer time than she has been accustomed to call normal, or if she flows between her periods, the treatment most often advised is a dilatation and curettage. This operation is advised all too often when no adequate study has been made of the case and when one does not know what is really the cause of the menorrhagia and metrorrhagia.

A patient may have a hyperplasia of the endometrium and as a result of this condition suffer from both menorrhagia and metrorrhagia and yet many times may require nothing but the simplest treatment. We cannot always take the word of the patient that her flow has been profuse or that it has been prolonged. It is much better to try to determine the severity of the flow by making a careful blood examination, thus finding out whether the flow has been sufficient to have caused even a mild secondary anemia. If a patient states that for one year she has flowed profusely for eight days and that up to that time her periods lasted but four days and that the amount previous to a year ago was much less than at present, one rightfully arrives at the conclusion that there is some abnormality of menstruation. But if a blood examination shows a hemoglobin index of between 90 and 100 and a red blood count of about 5,000,000 we certainly should not be unduly alarmed by the patient's history. Such cases are many times amenable to a simple tonic treatment.

With metrorrhagia the picture is somewhat different and usually there is an organic cause for the patient flowing between her periods. But many times, questioning will reveal that what the patient has called "flowing" is really no more than a slight "staining" and may be due to a mild endocervicitis, a condition that many times may be easily and readily corrected in the physician's office by local treatments. A complete blood picture in this type of case is also essential before any particular line of treatment can be recommended.

Many cases of uterine hyperplasia are due to a pituitary or ovarian dysfunction, and a dilatation and curettage is going to result in nothing more than the removal of the diseased endometrium. If the pituitary and ovarian dysfunction are not properly studied and treated, there will be a return of the hyperplasia within a very short time. In other words, many times we do absolutely nothing but treat the end-result of the dysfunction and neglect entirely the etiologic factor. Every one of us has done numerous dilatations and curettages in past years, when we were ignorant of the part played by the endocrine glands and every one of us can look back and recall numerous cases which were not helped in the least and now we know the reason why. With our increased knowledge of the causes of menorrhagia and metrorrhagia let us make sure that the case is really surgical, and not wholly medical, before we advise even this simple procedure.

Many will say that the average gynecologist or general practitioner of medicine has not been sufficiently well trained to decide what, if any, endocrine disturbance may be the etiologic factor in cases of menorrhagia or metrorrhagia. I will agree to that statement almost in its entirety and will say that although I am a gynecologist, nevertheless, I refer many so-called gynecological cases to the endocrinologist.

Case 1. Within the past year I have had referred to me a young girl about 18 years of age who, because of menorrhagia and metrorrhagia, had been twice curetted by a most competent surgeon. The result in each instance was the same, that is, a few weeks after the patient's discharge from the hospital she started to flow again and felt that the dilatations and curettages had done her absolutely no good.

Examination showed her to be a well-developed and well-nourished young girl with a moderate secondary anemia. I knew the surgeon who had operated on her and also knew that he could do a dilatation and curettage just as well as anyone else. I made up my mind that, if this very competent surgeon could not give the patient relief by two curettages, the result would probably be the same if I advised a third. I referred the patient to an endocrinologist who, after making the necessary studies of the pituitary, ovary, thyroid, and other indicated organs, decided that the case was a proper one for treatment with antuitrin-S. Within a comparatively short time the patient's menorrhagia and metrorrhagia were cleared up—cleared up to such an extent that the girl's excessive flowing was followed by amenorrhea. After three months of amenorrhea her constant flowing returned and the patient was referred back to me for another pelvic examination.

Under ether anesthesia it was found that the uterus was somewhat smaller than normal and that the vaults were free. The examination revealed nothing that would warrant surgical interference. To be sure she was still flowing which might have been sufficient indication for curettage were it not for the fact that on two previous occasions she was not helped by this procedure. After further study the endocrinologist made a diagnosis of a small cystic ovary and expressed the opinion that it was this condition that caused the patient to suffer from both menorrhagia and metrorrhagia. If she had an ovarian cyst it was necessarily a small one, so small, in fact, that it could not be felt on examination.

Finally, an exploratory laparotomy was performed, at which time it was found that the uterus was somewhat smaller than normal and one ovary normal. The other ovary was not much enlarged but was nothing but a cystic shell. A unilateral oophorectomy was performed and before the patient left the hospital she had stopped flowing. Since her

operation she has had perfectly normal periods and her general physical condition is excellent.

I feel that the successful outcome of this case is due almost wholly to the excellent work done by the endocrinologist. This case shows not only how necessary it is to have the proper endocrinological study, but also how futile are our efforts in many instances when all we do is simply a dilatation and curettage. Let us constantly bear in mind that you cannot cure pituitary, ovarian, thyroid or adrenal dysfunction by removing the uterine endometrium. We should first find out the causative factor and treat the case accordingly. We should never treat solely the result of the causative factor.

CASE 2. I have under my care at the present time a patient, 47 years of age, who is suffering from both menorrhagia and metrorrhagia. Her blood picture remains fairly constant with a hemoglobin of 85 to 90 per cent and a red blood count of about 4,500,000. She is also suffering from a marked vascular hypertension. I referred her to an internist in order that I might receive a medical opinion as to how I should proceed with treatment. I wanted to know if her marked hypertension was a contraindication to any procedure and, if not, whether I should treat the patient by operation or by radiation. The internist reported that the menorrhagia and metrorrhagia might well be looked upon as a blessing in disguise and that possibly her flowing might mean the difference between a fairly comfortable existence for some few years to come or, perhaps, a cerebral hemorrhage and that, furthermore, a not too profuse flow might serve the purpose of keeping her blood pressure relatively low. Neither the internist nor I intend to allow this patient to flow for years, but we are hopeful that within a comparatively short time she will have a normal menopause which would certainly be a better result than could be obtained at the present time by operation, radium or x-ray.

In the two cases which I have discussed I have stressed the fact that I did not advise a dilatation and curettage. I do not wish to give the impression that that is my opinion in every case because I feel very strongly that a diagnostic dilatation and curettage or a biopsy should be done whenever there is even the slightest suspicion that the menorrhagia or metrorrhagia may be due to carcinoma of the fundus or carcinoma of the cervix. If we are to lower our all too high mortality from carcinoma of the cervix and carcinoma of the fundus it can be done only by making an early diagnosis, and the only way to make a positive early diagnosis is by a diagnostic dilatation and curettage or by a biopsy. I feel, too, that a dilatation and curettage to be of the greatest help should be done in a hospital or, if done at home, should be done under an anesthetic and the whole cavity of the uterus properly explored. In recent years there has been a tendency on the part of some to use a so-called "suction curet" for diagnostic purposes. I feel that it is quite possible in using this instrument for one to obtain perfectly healthy endometrial tissue from one part of the uterus and yet miss another part of the uterine cavity which may show a marked diseased condition. Because of this fact I think it better to do a thorough and complete curetting of the entire uterine wall.

Menorrhagia and metrorrhagia are many times outstanding symptoms in cases of pelvic inflammation and in cases of ovarian and uterine tumors. Many times a dilatation and curettage in cases of this type does absolutely no good and may do harm. Pelvic inflammation, ovarian tumors, extrauterine pregnancies, tubal abortions and fibroid tumors may all have menorrhagia and metrorrhagia as the outstanding symptoms and cannot be cured by a dilatation and curettage but must be treated by laparotomy.

Hyperplasia of the endometrium occurs very frequently at the time of the menopause and with it, of course, one has menorrhagia and metrorrhagia as outstanding symptoms. The question often arises as to the best method of procedure in such cases. If they do not yield to simple treatment should they be treated by hysterectomy or by radium or by x-ray? I feel that many times cases of this type are treated by hysterectomy when they might well be treated by radium and deep x-ray therapy. The proponent of hysterectomy is very apt to tell you that the patient has passed the child-bearing period and that whereas he would not consider hysterectomy in a younger patient, he feels that it is the better treatment in a patient 45 years or over. He forgets, however, that every time the abdomen is opened there is a possibility of general peritonitis, blood stream infections, postoperative pneumonias, emboli, as well as other less serious complications, and that the patient is an invalid for a period of from four to six weeks. On the other hand, after a diagnostic dilatation and curettage has been done, radium may be inserted with a hospitalization of only a few days, or deep x-ray therapy may be given in the office of the roentgenologist. To be sure there is a slight possibility that unlooked-for complications may result in cases treated by x-ray or radium, but the possibility is not nearly so great as in those cases treated by laparotomy. Certainly from the economic viewpoint many of these cases would be better treated by radiation and deep x-ray therapy. The same opinion also applies to certain cases of fibrosis and let it be understood that I draw a distinctive line between the diagnosis of "Fibrosis" and "Fibroid Tumors". I would advise hysterectomy in cases of fibroid tumor (except a very small one), and I would advise radium and deep x-ray therapy in not too marked cases of fibrosis.

One of my medical friends who is also interested in pathology (for obvious reasons I cannot mention his name) has told me that he often wonders why hysterectomies, salpingectomies, and oophorectomies have been done on many patients whose organs he has seen after their removal. He once facetiously inquired if the

old order of things had been changed; that he knew appendices were being removed routinely when the patient was operated upon for another condition, but he was beginning to wonder whether some were now removing the uterus, tubes and ovaries routinely as part of an operation for an acute, subacute or chronic appendicitis. He remarked that the only sign of disease he saw in the removed organs was in the appendix. That remark was made facetiously, of course, but, nevertheless, conveyed an implication that some of us were treating cases surgically that might well be treated by radium and deep x-ray therapy.

Radium and deep x-ray therapy may be better treatment in comparatively young patients than is hysterectomy. Although one must bear in mind the possibility that menstruation may never return if a patient has been treated by deep x-ray or radium, we all have seen many patients who after a lapse of two or three years have had a return of the menses, a result certainly to be desired. On the other hand, if the uterus or ovaries are removed, there will be no return of the menstrual function and no further possibility of pregnancy. I am not advocating radium or deep x-ray therapy for all cases but am advising that one should conscientiously decide which is better in each particular case. Certain cases of endometritis, certain cases of fibroids and all cases of carcinoma of the cervix are better treated by radium and deep x-ray therapy than by operation. Carcinoma of the fundus, I feel, is best treated by radiation first and then hysterectomy. The uterus with multiple fibroids or the uterus with one large fibroid is better treated by hysterectomy.

Prophylaxis is as important in the treatment of menorrhagia and metrorrhagia as it is in every other branch of medicine. Obstetric patients should not be allowed to get out of bed if they are still flowing freely or if, on examination, there is considerable subinvolution. I feel that the obstetric patient should be treated routinely with an oxytocic and hot vaginal douches during her last four or five days in bed. The patient with a properly involuted uterus is less apt to suffer in the future from menorrhagia and metrorrhagia than is the patient who arose from her bed with a marked subinvolution or with free bleeding. Obstetric patients should be examined routinely three weeks, six weeks and ten weeks after delivery, and, if an erosion or endocervicitis is found, the condition should be properly treated by diathermy, operation or topical applications. If the obstetric patient is given the same careful treatment postpartum that she receives antepartum there will be less tendency toward menorrhagia and metrorrhagia during the succeeding years of her life.

In conclusion I wish to emphasize what I consider to be important points:

1. Always do a diagnostic dilatation and curettage or a biopsy if there is the slightest suspicion of malignancy.
2. Never do a dilatation and curettage until the proper endocrinologic and medical studies have been made in each case, unless, of course, there are positive local signs to explain the symptoms of menorrhagia and metrorrhagia, such as mucous polyps or retained products of conception.
3. Many cases now being treated surgically might well be treated by radium and deep x-ray.
4. Prophylaxis. Prevent so far as possible the occurrence of menorrhagia and metrorrhagia by giving the proper care to an obstetric patient during her postpartum period.

DISCUSSION

CHAIRMAN KICKHAM: Before opening the formal discussion I wish to thank Dr. Good for a delightful paper; one that has certainly covered the ground thoroughly in the field chosen for his subject. I wish to ask whether the gentlemen in the back of the hall were able to hear clearly through this microphone. I also wish to state that all papers will be open for discussion by any lady or gentleman present. In fact, the more discussion we have, the more questions asked, the more interesting it will be. Do not hesitate. We are all doctors and we know we are not all good speakers, so do not hesitate to ask any appropriate question. I request when anyone rises to speak, that he kindly announce his name so that the Secretary can record it, because the proceedings will be published later.

The discussion of the paper just read will be opened by Dr. Edgelow, but before opening the discussion—having just glanced toward the back of the hall and noticed that the founder or father and most important member of our Section of Obstetrics and Gynecology, the present President of the Massachusetts Medical Society, Dr. Mongan, is at the back of the hall—may I ask the gentleman beside him to escort him to the platform. (Dr. Mongan was escorted to the platform.) As you are all aware, in this particular Section—in fact throughout the State, but especially in this particular Section—we really have a deep affection for Dr. Mongan.

The formal discussion will be opened by Dr. Arthur F. G. Edgelow of Springfield. Dr. Edgelow has been called out, so Dr. Palermo will open the discussion.

DR. ALFONSO A. PALERMO, Springfield: I had the pleasure of reading Dr. Good's paper, some days ago, and now of hearing it, and I have been impressed with the sound common sense it contains.

"Conservative" is a hard word to define, but as Dr. Good uses it, it is apparently synonymous with the word "best". In a patient bleeding beyond the menopause, with curettings showing no malignancy, radical treatment with radium or hysterectomy, might be considered more conservative than worrying along for weeks or months with hormones, only to resort to the former treatment in the end. In the case of Dr. Good's hypertensive patient who, at 47, is having menorrhagia and metrorrhagia, I would like to know what her endometrium shows now, rather than wait for one or two years. In spite of her excellent blood picture, I should prefer a conservative dilatation and curettage to radical inactivity.

In dealing with abnormal bleeding associated with pelvic inflammation, the Elliot method of treatment

was not mentioned. I call to mind a purely hypothetical case: In a hospital with but one Elliot machine, and a number of patients to be treated, the instrument was hooked up with two patients in adjoining beds at the same time. The nurse left the room for a few minutes, and when she returned, the air was blue with profanity. During a comparison of pelvic notes between the patients, it had developed that one was the wife, and the other the stenographer of the same gentleman, and each was accusing the other of being the source of her own infection. I would like to ask Dr. Good if he would consider the Elliot treatment radical or conservative in this particular instance?

I like the quadrumvirate which Dr. Good has assembled for the effective handling of this gynecological difficulty — the radiologist, the internist, the endocrinologist and the gynecologist—and I agree that their several efforts should effectively combine to stanch the flow in the most conservative way.

CHAIRMAN KICKHAM: The next formal discussion will be opened by Dr. Edward L. Kickham of Boston.

DR. EDWARD L. KICKHAM, Boston: Mr. Chairman, I am sure that we all enjoyed the excellent paper of Dr. Good, not alone because of the sound advice and excellent procedure suggested, but also, in the consideration of such common and fundamental gynecologic problems as menorrhagia and metrorrhagia, he has brought to our attention some of the faults in their treatment which may be all too prevalent.

It does not seem possible that in the light of our present knowledge repeated dilatation and curettage should be done for the regular or irregular bleeding described as menorrhagia or metrorrhagia. Yet we will all have to agree that occasionally in taking histories this fact is disclosed.

I can only mention, with emphasis, the necessity for a diagnostic dilatation and curettage in these cases, almost regardless of age and the value of the pathological report, which is most important. With the occurrence of malignancy apparently increasing and the age of incidence being lowered, this point is essential to the proper conduct of future treatment.

As to the endocrines in these conditions, I believe as the speaker has said, that we have advanced in this field and it promises much for the future, but there is such a lack of unanimity of opinion, such a variety of products, such a shotgun type of treatment suggested and such an unexpected, eventful and sometimes uncontrollable result obtained, that I fear we are expecting too much, and in so doing may sacrifice our well-grounded gynecological principles, especially clinically.

I would like to call attention to the suggestion of the speaker in regard to subinvolution of the uterus following delivery as a frequent cause of menorrhagia and metrorrhagia. There has been in recent years a tendency to discharge patients early or allow them to be out of bed earlier than formerly. This has been due in a large sense to the economic problem of hospitalization, or if at home, to employment of help. I have noticed, especially in the clinic, a tendency toward an increase in the number of cases of subinvolution. We know that time alone will help this situation and that sufficient time should be spent in bed.

The question of the use of radium or deep x-ray as against hysterectomy is certainly an important one and is more or less controversial. I will have to agree that I believe there are many more hysterectomies being done than are necessary. I am speaking especially of women from 30 to 45. The difference of opinion seems to revolve about the effect on and the value of the ovaries in these women. In the cases treated with radium or x-ray there is likely to be an effect on the function of the ovary, although in the hands of expert roentgenologists and radiologists with accurately estimated dosage this is minimized and the patient may be carried to natural menopause by small repeated doses which will control excessive bleeding but still allow the function of the ovaries. In hysterectomy we have positively controlled the hemorrhage with no effect on the ovaries or relatively little, but in doing this we have prohibited future pregnancies, which in many of these women is important. I am inclined to advise conservative treatment in the average case, since the radical course can always follow if necessary.

DR. BENEDICT F. BOLAND, Boston: I think we all appreciate the excellent paper that Dr. Good has read this afternoon as it is really a textbook synopsis of these conditions condensed into simple and salient facts.

First of all, I am in full accord with what Dr. Good has said about dilatation and curettage. His reference to performing biopsies in the hospital, I feel, is excellent judgment. The tendency to acquire biopsy material with a curet, as an office procedure, may be satisfactory in an occasional case, but its universal employment may often fail to produce adequate material and a malignancy may be missed. Personally, I am of the opinion that when a biopsy is indicated the hospital is the place to perform it.

The use of some type of cautery has been advocated in the treatment of some of these lesions. I appreciate that many cervices which in the past have had mutilating and extensive surgical procedures and also many abnormal cervices, especially in women of child-bearing age, are treated by some form of surgical diathermy with less destruction and better results. However, I feel that the employment of this agency demands a careful attention in technic, and discriminating judgment in its application. The use of heat in the form of cautery is contraindicated during an acute cervical infection or in the presence of an acute or subacute salpingitis, for it may produce a parametric infection, pelvic abscess or peritonitis.

Use of the electrocautery in the treatment of diseases of the cervix uteri is far from being a harmless procedure. The feeling has become general, unfortunately, that no complications need be feared in the routine use of the cautery. The ease with which the method may be applied and the excellent results obtained, almost universally, have had the effect of minimizing any apprehension on the part of those employing cautery. Abnormal epithelium is destroyed, deep infection is checked, followed in the majority of cases by epithelialization of the cervix and complete cure of the lesion without surgical operation or prolonged treatment. Reticence in discussing unfavorable results has perhaps tended to conceal the true incidence of complicating cellulitis. This danger is increased in cases of displacement where there is interference with good mechanical drainage from the uterus and where necrotic material stagnates within the uterine canal. Patients, with a history of an infection associated with an abortion, especially of recent occurrence, are bad subjects for cauterization. The use of the colposcope, an illuminated vaginal speculum and focusing telescope, which has the magnification of ten times the human eye and which permits the diagnosis of inflammatory changes in the mucous membrane of these cervices, is helpful. It permits an early diagnosis of leukoplakia which

cannot be diagnosed by palpation. Observers differ on the time it takes to develop into cancer, but since these cases do become cancerous, leukoplakia must be considered a step in its development. The colposcope is indispensable in Lugol's iodine reaction test. One of the speakers has made reference to the Elliot treatment. Years ago when this treatment was in its infancy, I was chosen by the Gynecological Staff of the Boston City Hospital to undertake an investigation as to the merits of this method. The Elliot treatment has some value, but is limited and strictly a hospital procedure. It is effective in inflammatory lesions. Heat to the pelvis can be raised from 98° to 130° F. Cervical discharge is promoted and after an application of one half hour, the cervix takes on a tissue-paper consistency and is very friable. It is contraindicated in fibroids because it promotes bleeding. Therefore, I would object to its use in menorrhagia.

Dr. Good has mentioned fibrosis of the uterus, but has not differentiated the size of the uterus in which he uses x-ray and radium. I have used x-ray in that type of fibrosis of the uterus only when it is normal or slightly larger than normal. Those cases of the two and three months' size do not appear to react well. Occasionally a case of this type is aggravated by the use of radium. Will Dr. Good kindly explain in what type of uterine fibrosis he applies x-ray and radium therapy?

Dr. Benjamin Parvey, Boston: I am extremely grateful to Dr. Good for mentioning that the laboratory study is important in menorrhagia and metrorrhagia, as well as amenorrhea. We know that menorrhagia and metrorrhagia are usually due to an excess of female sex hormone secretion in the blood stream. In the majority of cases curettage would not be necessary, since quantitative analysis of urine would undoubtedly show an excess of this hormone. Kurzrok has demonstrated experimentally that a normal menstruating woman excretes 10 to 20 rat units of female sex hormone per liter of urine, in 24 hours. The lesser amount is found after menstruation and the greater at the midmenstrual or ovulation period. The presence of an excess of female sex hormone beyond 20 rat units is an indication of an overstimulated ovary. Such cases can be treated by hormonal therapy. Up to the present time, cases of either menorrhagia or metrorrhagia were treated with antuitrin-S or Follutein taken from pregnant urine. Mazer of Philadelphia found that, by using the "growth hormone", the whole gland, in addition to antuitrin-S, better results were obtained. The rationale for such therapy is found in an analysis made by Kurzrok of the relative proportions of the amounts of anterior pituitary A and B in Follutein and the growth hormone.

Follutein (Squibb)	— A.P.H.<	A-7 parts
Antuitrin (P & D)		B-3 parts
Growth Hormone Extract (Squibb)	— A.P.H.<	A-2 parts
Antuitrin-G (P & D)		B-8 parts

The A element is the graafian follicle stimulating factor, and B is the luteinizing. Since menorrhagia and metrorrhagia are due to an excess of pituitary A, it is obvious that the combination of antuitrin-S or Follutein with growth hormone would thus control bleeding by the excess of B which would neutralize A. Dr. Meigs in a recent paper found that in cases where antuitrin-S had been used for menorrhagia or metrorrhagia there were a large number of ovarian cysts in operative cases. This is explainable when we take into consideration the fact that antuitrin-S is rich in A and thus used to stimulate an already overstimulated ovary. It can be readily seen that in these cases the growth hormone alone would have been preferable. Now since progestin (Upjohn), the active principle of corpus luteum, is obtainable, this would be even more desirable.

I have one case to report if you will permit me. This is a case of a woman of 26 years (para 1) who apparently had a dilatation and curettage performed for menorrhagia at a nearby large hospital. Five days after discharge from the hospital she began to bleed profusely. I sent her into a hospital a week later for another dilatation and curettage suspecting the presence of polyps. At the operation, none having been found, I performed a trachelorrhaphy and colpoperineorrhaphy. She made an uneventful recovery, but the following period was attended by the same amount of profuse bleeding. A quantitative analysis at this time showed definite evidence of an endocrine disturbance; to wit, 30 rat units of female sex hormone per liter. A basal metabolism test showed a rate of 26 per cent minus. Treatment was begun with 2 cc. of growth hormone, once a day for five days and thyroid, gr. 1, t.i.d., continuously. This treatment was repeated ten days before the expected menstruation and thereafter for three months until she became pregnant; and at each period prior thereto she had an excess flow but no menorrhagia. In spite of the recommendation by a reputable gynecologist whom she consulted without my knowledge that a hysterectomy be performed, I persisted in this treatment and later delivered her of a normal living child. Since that time she has been menstruating normally without the use of any hormone therapy.

Dr. Frederick L. Good, Boston: In reply to a question from the floor, in the case of the hypertensive patient, what her endometrium shows now, let me say I cannot tell you what her endometrium shows in so far as a pathological examination is concerned, because the patient has yet to be operated. She is unmarried, with a normal, conical cervix and uterus that is normal in size, or smaller than normal, and vaults that are free. I haven't forgotten the possibility of malignancy of the fundus in that case. In fact I have borne it in mind constantly. She is not losing weight, however. On the contrary, she has put on weight and the picture has never been such that I felt duty bound to do a diagnostic dilatation and curettage.

About the Elliot machine, let me say that I am not going to discuss the relative merits or demerits of this apparatus in the treatment of cases of pelvic inflammation. I will say, however, that I do not like the Elliot machine in the treatment of menorrhagia or metrorrhagia. Dr. Kickham rightfully reminds us of the frequency of malignancy and stresses the fact that where there is any suspicion, a diagnostic dilatation and curettage should be performed. I agree with him in that opinion heartily.

Dr. Boland raises the question of the value of radium or deep x-ray therapy in cases of fibrosis, and inquires in what type of case of fibrosis I would recommend radium and deep x-ray therapy and in what type I would recommend surgery. If after doing a diagnostic dilatation and curettage I find a uterus that is but slightly deeper than normal, or that is regular in contour, a uterus that is about the size of what we conceive a 6 to 8 weeks' pregnancy to be, if I had a uterus smaller than my closed fist (indicating), I would treat that case with deep x-ray therapy and radium. If the uterus were larger than that, I would waste no time with deep x-ray therapy or radium but would do a hysterectomy. Dr. Boland raises the question of the possibility of pelvic inflammation when the patient is

treated with cautery. I am mindful of that fact and also that the worst case of pelvic inflammation that I have ever seen followed a dilatation and a curettage on a patient who was suffering from hyperplastic endometritis. Regardless of the possibility of pelvic inflammation due to cauterization, I still feel that cases of endocervicitis, and not endometritis, are better treated by cautery or topical applications.

I have been very much interested in the comments of Dr. Parvey and think what Dr. Parvey has said demonstrates the truth of my statement that few of us know enough about the different hormones to draw our own conclusions, and that it is far better to refer each and every case to the endocrinologist for further study.

CHAIRMAN KICKHAM: Thank you, Dr. Good.

We have been very fortunate to have at least one gentleman as a guest from outside our own environment, who will speak to us. I think, on this particular occasion, I cannot speak too fulsomely about the gentleman who will address us next. He has the reputation, as you know, of being not only a great surgeon but a perfect gentleman and a good fellow thrown in. I think we are very fortunate in being able to have Dr. Schumann come all the way from Philadelphia to speak to us on a subject that is not only interesting to us but a subject that he has made a particular study of, and therefore, what we will hear is really the latest authoritative opinion on the subject that he will present. It gives me great pleasure to present to you Dr. Edward A. Schumann of Philadelphia, Professor of Obstetrics, University of Pennsylvania School of Medicine, Surgeon-in-Chief, Kensington Hospital for Women, Obstetrician and Gynecologist, Philadelphia General Hospital, who will present "Observations Upon the Hemorrhage of Pregnancy." Dr. Schumann.

OBSERVATIONS UPON THE HEMORRHAGE OF PREGNANCY*

BY EDWARD A. SCHUMANN, M.D.†

THE three major causes of maternal death during pregnancy and labor, are in order of frequency, sepsis, toxemia and hemorrhage. Bleeding of varying severity may occur at any time during pregnancy, labor, or the puerperium, and is often associated with some defect in the implantation of the placenta, although it may have other sources.

The etiology of bleeding during pregnancy varies with the period of gestation, and, for the purpose of diagnosis, it is well to consider pregnancy in its three trimesters and to classify the causes of hemorrhage in each according to their relative frequency.

In the first three months, by far the most common cause of uterine bleeding is threatened or inevitable abortion; the second is ectopic pregnancy. These two account for more than four-fifths of all hemorrhages. Next in point of frequency are hydatidiform mole, persistence of menstruation, menstruation from one horn of a double uterus, uterine polyps, cervical erosion or carcinoma, all of which are uncommon.

Although the classical picture of abortion shows pain, hemorrhage and dilatation of the os, it is noteworthy that in many instances painless bleeding may persist for several weeks, before complete separation of the ovum, or its death, inaugurates uterine contraction with the development of the other two elements of the syndrome.

Hemorrhage in abortion may be furious, with rapid exsanguination of the patient, but I have never yet seen a fatality with this accident which could be ascribed to hemorrhage alone. When infection occurs, the prognosis among women with severe anemia becomes very grave, but bleeding without infection is rarely a cause of death.

The diagnosis of abortion with hemorrhage may be made by the elicitation of the signs and symptoms of pregnancy in the first trimester, plus the findings of some degree of dilatation of the cervix on bimanual examination and the history of pain and bleeding. If fragments of decidua or placenta are found, the evidence is conclusive. The most important condition with which uterine abortion may be confused is ectopic pregnancy and the differentiation of these conditions is often difficult.

The classical picture of ruptured ectopic pregnancy — sudden catastrophic pain, with fainting and collapse, is seen in slightly less than half of all cases, the more common symptoms being a dull but increasing abdominal pain, rigidity of the recti muscles, slight elevation of temperature and a moderate or high leucocytosis. Associated with these symptoms is vaginal hemorrhage, which although it may at times be fairly profuse, is never violent. Indeed, one of the valuable signs for differentiation is the fact that the woman suffering from ectopic pregnancy may, and frequently does, show the effect of severe blood loss, although the visible hemorrhage is negligible; whereas in intrauterine abortion, the evidence of anemia is in direct ratio to the visible amount of blood.

The history in these cases is also most important from a diagnostic standpoint. In abortion, there is complete amenorrhea, with the associated subjective signs of pregnancy—nausea and vomiting, polyuria, pain and tingling in the breasts and increased vaginal secretion. In ectopic pregnancy the signs of pregnancy are vague, usually, at least not so pronounced as

*Read at the Annual Meeting of the Massachusetts Medical Society, Section of Obstetrics and Gynecology, Springfield, June 8, 1936.

†Schumann, Edward A.—Professor of Obstetrics, University of Pennsylvania School of Medicine. For record and address of author see "This Week's Issue," page 845.

in uterine gestation. The amenorrhea is generally not complete, the patient stating that she has missed a period, but noted some slight spotting a week or two later, which has been repeated in greater amount before the onset of pain.

On bimanual examination, the uterus in abortion is definitely increased in size, is soft and globular in outline. The cervix is velvety and dilated to a varying extent. There may be some cyanosis of the cervical and vaginal mucosa and Hegar's sign, obliteration of the lower uterine segment, may be present. Ladin's sign, a small area of marked softening in the anterior wall of the cervix and lower uterine segment, is a common finding. In ectopic pregnancy, the uterus is generally only slightly enlarged and the characteristic boggy density is not noted. Movement of the cervix is often quite painful, and palpation of the adnexa may or may not reveal the presence of a tender, soft, spindle-shaped mass. If there has been a considerable accumulation of blood in the pelvic cavity, the culdesac may bulge, with a doughy sensation being imparted to the examining finger.

The nature of the pain in the two conditions is often very valuable in diagnosis. In abortion the pain is intermittent, cramp-like, and the patient likens it either to menstrual cramps or labor pains. In ectopic pregnancy the pain is at first to one side or the other of the mid-line, and then becomes a generalized abdominal ache, as free blood in the peritoneal cavity causes irritation and mechanical peritonitis.

The management of abortion with severe hemorrhage is usually restricted to firmly packing the vagina with gauze or cotton, under aseptic precautions, the packing to remain in place for twenty-four hours, after which the products of conception will often be found lying free in the vagina, upon the removal of the gauze. When the abortion occurs at the end of the third month, or early in the fourth, the placenta may often be found lying in the cervical canal and presenting as a tightly rolled cylinder: simple extraction with the fingers or a ring forceps, under such condition, often stops the bleeding. The administration of ergot, especially the newer ergonovine preparations, will do much to contract the uterus, and aid the extrusion of the ovum.

Curettage is not often necessary, although it may be required in the presence of persistent bleeding. Although this is a minor operation it requires considerable skill and care, for perforation of the pregnant or puerperal uterus is by no means an uncommon accident. In a case recently admitted to Kensington Hospital for Women, an attempt at evacuation of the uterus resulted in the drawing, through a rent in the uterine wall, of four feet and two inches of ileum, completely stripped from its mesentery (fig. 1). On laparotomy, the loop of gut was found so tightly imprisoned in the uterine wall that practically no bleeding had taken place and simple resection of the bowel, and suture of the uterine wound, resulted in prompt recovery.

The management of ectopic pregnancy requires little comment. Prompt laparotomy upon the establishment of the diagnosis is the rule. One point of importance is that, in the interval

FIG. 1. A loop of ileum stripped of its mesentery and drawn through a perforation of the uterus, in an attempted evacuation for incomplete abortion. (Kensington Hospital for Women.)

between the occurrence of the hemorrhage and operation, there should be no stimulation or intravenous therapy practised. Morphine to secure rest, elevation of the foot of the bed, and external heat, are valuable measures; but stimulation should be reserved until the patient is prepared for section, when blood transfusion, 10 per cent glucose intravenously and cardiac stimulants may be used freely.

Hydatidiform mole is a somewhat uncommon, but very definite, source of uterine hemorrhage. The diagnosis may be confirmed by the fact that the uterus is considerably larger than normal for the duration of the pregnancy, that the patient has experienced more than the ordinary degree of nausea and vomiting, that the Asch-

heim-Zondek or Friedman test is positive with greatly diluted urine (one tenth the usual amount) and that, if the pregnancy be of more than sixteen weeks' duration, roentgenologic examination will fail to show centers of fetal ossification. The passage of the little cysts which constitute hydatidiform mole is conclusive evidence.

The treatment of mole is immediate removal of the growth, *per vaginam* possibly, but better by abdominal hysterotomy under local anesthesia, the mole being removed under vision. It is almost needless to say that all such cases should be closely watched, with periodic Friedman tests, to determine the possible signal of chorionepithelioma.

The other causes of bleeding during the first three months which I have mentioned are uncommon and may usually be recognized with ease by a speculum examination.

In the second trimester, abortions still take the lead as a cause of hemorrhage, closely followed as this period draws to a close, by the bleeding from placenta praevia. Ectopic pregnancy, polyps, and so forth may be responsible but not commonly so, since their presence has been usually disclosed earlier.

After the fifth month, placenta praevia must always be uppermost in the mind of the obstetrician, when uterine bleeding is present. Here the classic symptom is painless bleeding, often slight in amount at the first attack, with irregularly recurring hemorrhages of increasing severity. The diagnosis of placenta praevia so early in pregnancy offers great difficulty. Since endometritis is an etiologic factor, a history of preceding abortions or uterine disease is of some value. The condition occurs far more commonly in multiparas than in primiparas, and the bleeding is always painless, and seemingly without cause, although coitus or excessive muscular exercise may precipitate a hemorrhage.

When there is grave doubt, the roentgenologic method or diagnosis as described by Ude and Urner[1] is of great value. Their technic is to instill into the empty bladder about 40 cc. of a solution of sodium iodide (12½ per cent) or other contrast material. An anteroposterior film of the pelvis is now made, the catheter having been first withdrawn. In normal pregnancy, the presenting head lies almost in contact with the bladder, the intervening space occupied by the lower uterine segment, the space between bladder margin and fetal head appearing to be about 6 to 8 mm. in length. In placenta praevia, the mass of the placenta, its concave border upward, lies between the fetal head and the bladder, separating the two by a space of varying width, depending upon the thickness and location of the placenta, and clearly visible on the x-ray film. This method constitutes a distinct advance in the diagnosis of placenta praevia, especially because it involves no vaginal manipulation, which might favor separation or lead to infection.

Lacking roentgenologic facilities, the diagnosis must depend upon the history, the nature of the bleeding and auscultation with possible demonstration of a placental bruit low over the symphysis. The discovery, upon vaginal examination, of a soft doughy mass lying between the head and the cervix will confirm the diagnosis; but this is a dangerous maneuver and should not be undertaken unless the accoucheur is prepared to deal at once with dangerous hemorrhage.

The treatment of placenta praevia constitutes one of the major problems of obstetrics and the management of this lesion before the complete viability of the child is a very perplexing one. It has been well said that there is no expectant treatment of placenta praevia, and one or two bitter experiences with attempts to temporize with such situations have amply confirmed me as to the correctness of this axiom. What is to be done with the young woman, a primipara, let us say, who is in the seventh month of her pregnancy, ardently desires a child, and develops the characteristic signs of placenta praevia? It is true that in many instances a tranquil life, avoidance of coitus, vigorous exercise, and the use of cathartics, will allow pregnancy to continue to term or nearly so, without serious hemorrhage. It is also true that such patients may suffer a tremendous blood loss, of dangerous or even fatal volume, at any moment, the bleeding sometimes occurring during sleep. Nor is there any procedure available by which such accident may be forecast.

It follows then that pregnancy should be terminated as soon as the diagnosis is made, either by abdominal hysterotomy, or by induction of labor, depending upon the degree to which the placental mass covers the cervical canal. On the other hand, the desire to conserve the life of the infant, religious objections, and the fact that pregnancy may continue without disturbance, render such radical treatment quite distasteful, so that I have come to the conclusion that the best plan available is to explain the situation to both parents in great detail, and to require that the final decision come from them. For the protection of the physician against future criticism, should disaster follow conservative management, it is well to have the prospective mother and father state their wish in writing.

When the first hemorrhage occurs after the child is viable, a different problem arises. Undoubtedly, the best prognosis to mother and infant is offered by Caesarean section, preferably of the classical type, performed under local anesthesia by one fully trained in major obstetric surgery and in a qualified hospital. This

applies to all cases, except those occurring in multiparas with partial placenta praevia, where there is an available area of the cervical canal occupied by the membranes alone, thus permitting the induction of labor by simple rupture of the membranes or by the insertion of a dilating bag. As my own experience grows, I find myself rarely regretting the decision to deliver by section, while sometimes wishing this method had been chosen rather than the finally selected vaginal route.

In those emergency cases wherein the obstetrician is faced by the problem of serious hemorrhage with beginning labor, in a locality where prompt and efficient section is not available, the matter is serious indeed. Here there are several procedures available, none of them quite satisfactory but necessary as emergency measures. They are as follows: simple rupture of the membranes with the use of small doses of pituitrin, subcutaneously or by the nasal route, Braxton-Hicks version, the use of the metreurynter or dilating bag, and, as a last resort, vaginal packing together with a tight abdominal binder.

Simple rupture of the membranes, the Rotunda method, sometimes permits the descent of the head to act as a tampon, and, when combined with pituitrin to maintain uterine contraction, is of much value.

The Braxton-Hicks version, turning the child and drawing down a leg until the buttocks make pressure upon the placenta, works well for the mother but is extremely hazardous for the child, and is not available unless there be sufficient cervical dilatation to permit the entrance of two fingers into the uterine cavity. It should be remembered that extraction of the infant after this type of version is dangerous and that delivery should be left to the forces of nature so far as possible.

The use of the dilating bag was strongly advised by the late Dr. Cragin, who achieved great success with this treatment. The folded and lubricated bag should be passed alongside of the placenta if this be possible, or should be plunged through the mass of that organ if the praevia is central. The violent hemorrhage excited by perforation of the placenta is dealt with by rapidly filling the bag to capacity with an antiseptic solution and attaching a weight to the tube to insure strong pressure against the placenta from above.

Vaginal packing is a last resort, as has been said. If hospital facilities are not available, if the cervix is elongated and undilated and the hemorrhage furious, it is proper to pack the vagina fully and firmly using due precautions as to asepsis, and then to apply a very tight abdominal binder. This plan may serve to compress the placental site between the packing below and the uterus which has been forced down from above, and is a device which, while not generally advised, may be life-saving if no better plan of treatment offers.

In the last trimester, placenta praevia and abruptio placentae are the chief causes of uterine bleeding. Abruptio placentae, premature separation of the normally implanted placenta, is a somewhat uncommon accident which may rarely arise as a result of trauma, more frequently is said to be due to some form of toxemia, but often occurs without demonstrable evidences of such toxemia or even of degenerative changes in the placenta itself.

This accident, the concealed hemorrhage of the older writers, usually occurs during the last month of pregnancy, sometimes earlier. It is characterized by hemorrhage, not necessarily great in visible amount, but always associated with pain, more or less severe in type.

The separation usually takes place suddenly, the woman experiencing a sharp, lower abdominal pain, which steadily increases. The uterus becomes hard, often described as ligneous, and is tender to palpation, the fundus becoming flatter and broader. Fetal movements and heart sounds disappear and a trickle of blood escapes between the membranes and the uterine wall and appears at the vulva.

If the separation is extensive, the evidences of internal hemorrhage develop rapidly, the air hunger, leaking skin, pallor and falling blood pressure attesting to the profound anemia. As the separation becomes more nearly complete, the presence of blood in the uterus may force a large vaginal bleeding with many clots. Abruptio placentae is a matter of grave moment, both maternal and fetal mortality being exceedingly high.

The only available treatment is immediate delivery, *per vaginam*, if happily the cervix is sufficiently dilated to permit of forceps extraction, or abdominal hysterotomy. In the latter case, the uterus is often so infiltrated with blood, that hysterectomy becomes necessary.

Blood transfusion has not been mentioned hitherto in the treatment of the hemorrhage of pregnancy in order to avoid repetition in the discussion. Modern obstetrics demands that, in every case of uterine bleeding, the prompt securing of blood donors, and their proper typing and matching with the patient is a sine qua non, and transfusion should be resorted to early, and repeated as often as the condition of the patient demands.

Although, strictly speaking, pregnancy continues until the end of the third stage of labor, this paper has been arbitrarily limited to some of the earlier phases, and I have refrained from saying anything about the blood loss attending intrapartum rupture of the uterus and

postpartum hemorrhage with retained placenta which demands extended discussion.

REFERENCE

Ude, W. H., and Urner, J. A.: Roentgenologic diagnosis of placenta praevia. Am. J. Obst. & Gynec. 29:667 (May) 1935.

(Lantern slides were shown by Dr. Schumann illustrating some of the points presented in the paper read by him.)

DISCUSSION

CHAIRMAN KICKHAM: I want to thank Dr. Schumann for a most informative paper. He has certainly given us every fact in connection with antepartum hemorrhage and I am afraid the men who are going to open the discussion will find difficulty in deciding what to discuss. The only advantage in this is that the man to open the discussion is so competent that I think he probably will find something that will interest us that Dr. Schumann may have missed.

Before doing that I am going to ask members of the Committee—it is part of the duty of the Chairman to appoint a Committee to bring in the names of the officers for the next year—the Nominating Committee, to get together now or at any time they wish, so that they will have these names for us at the end of the meeting. The Nominating Committee has been appointed—Dr. Boland, Dr. Almy and Dr. D'Errico. The discussion will be formally opened by Dr. Louis E. Phaneuf, Boston.

DR. LOUIS E. PHANEUF, Boston: I have listened with great interest to Dr. Schumann's excellent presentation. Hemorrhage during pregnancy, labor and the puerperium may always be discussed with profit before a Society like ours. The essayist has limited his remarks to antepartum hemorrhage, a subject which in itself is a vast one. The diagnosis and management of abortion, ectopic gestation and hydatidiform mole have been so well covered that there is but little to add. Two points which Dr. Schumann has brought out should be emphasized, first, the great importance of blood transfusion as a life-saving measure in all cases requiring it, and secondly, prompt laparotomy when the diagnosis of extrauterine pregnancy is established. His suggestion of the treatment of hydatidiform mole by abdominal hysterotomy, under control of the eye, is a valuable contribution in the management of this disorder. By this means, we are more likely to remove the entire mole without trauma to the uterine musculature, thereby lessening the chances of a future chorionepithelioma. While, in the past, hydatidiform mole was not infrequently treated by hysterectomy in order to avoid the development of this highly malignant neoplasm of the chorion, the Aschheim-Zondek and the Friedman tests have made it possible to observe the patients treated for a mole closely, and as a result of this it has been possible safely to conserve the uterus in a number of instances.

Placenta praevia is an important source of hemorrhage during gestation. In a hospital service, where facilities are at hand for roentgen diagnosis, the method advocated by Ude and Urner and described by Dr. Schumann should be employed more frequently thus obviating the danger of starting a copious hemorrhage consecutive to a pelvic examination. The dangers inherent in the conservative treatment of this condition have been brought out. Cesarean section, doubtless, offers the best chances for mother and child. This method of therapy has been gaining ground steadily during the last quarter of a century. The type of cesarean section to be chosen depends largely upon the individual preference of the operator, some preferring the classical type of operation, while others elect to operate through the lower segment in order to inspect the placental bed and suture any bleeding areas encountered. One procedure in the conservative treatment of placenta praevia in the presence of a dead fetus has recently been mentioned by Dr. Fred L. Adair. When there is bleeding from a placenta praevia and the fetus is dead, a large vulsellum may be attached to the fetal scalp; by applying traction on the forceps the fetal head will cause pressure against the placenta and control hemorrhage. This maneuver which is easier to perform than the Braxton Hicks version, obviously, is not applicable to the living fetus.

Abruptio placentae is one of the most severe complications of pregnancy. Toxemia of pregnancy and trauma, such as blows on the abdomen, both play a rôle in the etiology. As Dr. Schumann has said, both maternal and fetal mortality are exceedingly high.

While in the lesser degrees of separation, delivery through the birth canal, if there is sufficient cervical dilatation, is the method of choice; those women who have a complete separation resulting in the so-called Couvelaire uterus are, in my opinion, treated with greater safety by abdominal celiectomy. If one has in mind the histologic picture of the uterus in the presence of this condition, one must admit that it takes a great deal of courage to stand by and await developments. I have repeatedly observed that in uteroplacental apoplexy with the uterine musculature friable, bleeding and ecchymotic, the lower uterine segment usually escapes the pathologic process. Advantage may be taken of this in performing cesarean section, since by placing the incision in the lower pole of the uterus, this organ may be saved while it would, in many instances, be sacrificed if the incision were placed in the friable, disassociated musculature of the uterine corpus, because of uncontrollable hemorrhage.

I want to express my appreciation to Dr. Schumann for this timely paper which so well covers the subject of the hemorrhage of pregnancy.

CHAIRMAN KICKHAM: Unfortunately Dr. Kellogg has been unable to attend, but he sends us Dr. M. V. Kappius to take his place and second the discussion.

DR. M. V. KAPPIUS, Boston: Dr. Kellogg regrets his inability to be here in person but he has prepared his remarks in written form and I am presenting them, of course, as his.

Dr. Schumann is one of America's great teachers in obstetrics and we are indeed fortunate to have him present a paper at this Section meeting.

The usual pointed brevity and completeness of his paper make comment on it of little added value. I shall confine my discussion to supplementing what he has said about Premature Separation of the Normally Implanted Placenta, based on our experience with this condition at the Boston Lying-in Hospital and on my own personal experience.

The points I would make may be briefly stated as follows:

(1) That premature separation is frequently and fortunately *not exactly* abrupt in its course—but slowly progressive in a matter of minutes to hours: that the classical picture of ligneous uterus, and so forth, which he presents represents the end of a process which though truly sometimes abrupt, frequently—if the patient be placed under immediate observation—is slow enough to permit the extraction of a live baby by abdominal section. This we all know; I merely stress the point because it has

always seemed to me that to emphasize the complete picture of abruptio is, from a teaching point of view, to underemphasize the importance of early diagnosis for both baby and mother. In our experience external bleeding is almost always—though not inevitably—the cardinal symptom, and internal concealed hemorrhage alone, *per contra*, the rarest exception.

(2) *Treatment.* At the Lying-in Hospital the maternal mortality in this condition treated by abdominal cesarean section in an early series was 22 per cent and in a longer later series including the first, 15 per cent. Because of this it seemed wise to Dr. Irving to eliminate cesarean section whenever possible. With this object in view the following policy is now pursued there. Cases seen when fully dilated are delivered from below. Those in which the fetal heart is good and the baby of reasonable size and sufficient number of weeks gestation and the cervix not fully dilated are delivered by abdominal cesarean section. Cases in which the baby is dead, too premature, or in obviously bad condition are treated by tight pack and Spanish windlass. The series so treated is not long enough yet to draw just comparative conclusions. However, one patient only in this series has died, and I believe from the results to date that this method decidedly deserves further trial by us and a broader use in this class of cases throughout the country. This in spite of the fact that it made no appeal to me at all when first proposed.

(3) *The Question of Hysterectomy in Premature Separation.* It has been for a long time my personal belief that hysterectomy is rarely called for in these cases. So-called disintegration of the muscle fibers of the uterus per se is rarely, if ever, I think an indication for this. Only cases that bleed under somewhat prolonged observation, with the abdomen open, merit hysterectomy. These are rare and in the hospital series have given our worst mortality even with hysterectomy. I have yet to take out a uterus in this condition except in one instance hardly to the point. This patient had a separated placenta, diffusely adherent placenta and fibroids. One patient in my personal series died. The autopsy showed that she died with acute hepatitis without hemorrhage from the uterus or necrosis of the uterus though it was badly disintegrated. Rapid restoration of the integrity of the uterus in spite of primary bleeding—often from each stitch hole—and watching with the abdomen open have always permitted me to leave the uterus with some misgivings. I am sure, however, that some day I will have to remove a uterus for bleeding.

(4) The question of anuric deaths in these patients we have elsewhere emphasized. I mention it here only to state the belief that it should never be overlooked as a possibility, and that steps should be taken to combat it from the beginning. These steps differ in different cases. Nice judgment must be exercised as to transfusion and fluids depending on blood pressure, edema, immediate kidney function and probable cardiac function.

DR. D'ERRICO, Boston: In reference to the differential diagnosis between extrauterine pregnancy and other pelvic disorders, I wish to call your attention to a simple test which I have found very helpful in the last five years in more than twenty cases of ectopic gestation with intraperitoneal hemorrhage. It is certainly a very much more reliable and constant sign than the famous Cullen sign that all of us have read or heard described but most of us have never seen.

For lack of a better name I call it the "bed-shaking sign" or test, or, as my house officers call it, the "D'Errico sign". It consists in gently rocking the bedspring on which the patient lies. In presence of intraperitoneal hemorrhage from any cause, including intraperitoneal bleeding from ruptured pelvic varicosities, ruptured uterus, ruptured hemorrhagic cysts, ruptured ectopic gestation and ruptured viscus due to trauma, the abdominal pain is greatly increased.

This "bed-shaking sign" is negative, that is, pain is neither elicited nor increased if the bedspring is gently shaken, in threatened abortions and miscarriages, pelvic inflammatory disease, appendicitis, general or local peritonitis, gallbladder disease, urinary tract disturbances and so forth.

What the explanation of this phenomenon might be, I do not know, nor will I venture a theory to explain it. But I wish to offer it as a simple aid in the diagnosis of ectopic gestation with intraperitoneal hemorrhage.

DR. BOLAND, Boston: I wish to express my appreciation to Dr. Schumann for his excellent presentation of this subject. I was particularly interested in his lantern slides and would like to ask two questions: First, although his slides appear to have a heavier percentage, I assume that he used a 5 per cent sodium iodide solution which is the customary percentage in cystogram work.

DR. SCHUMANN, Philadelphia: I did.

DR. BOLAND, Boston: Secondly, when the bladder for cystogram injection normally takes 12 to 20 ounces, why does Dr. Schumann confine his injection to only 40 cc.?

DR. BENJAMIN PARVEY, Boston: I would like to ask Dr. Schumann whether he believes that an Aschheim-Zondek test should be done in cases of hydatidiform mole as a basis for deciding whether a hysterectomy or a simple dilatation and curettage should be done.

The rationale for this rests with the fact that in cases of metastasis the test would be persistently strongly positive; whereas, a negative test would indicate no metastasis. Would Dr. Schumann recommend this procedure to obviate the necessity of a total hysterectomy? I have two cases of hydatidiform mole in mind where no radical measures were taken and in which there have been subsequent pregnancies. In one instance prior to the development of the Aschheim-Zondek test, the patient spontaneously passed a basinful of small chorion cysts after having been in bed for a period of three months in order to preserve what I assumed to be a normal pregnancy. Since that time she had four normal deliveries. In this case hysterectomy was strongly advised. In another case of recent date I emptied the uterus of a patient for a hydatidiform mole, following this I carried out weekly Aschheim-Zondek tests which continued to be positive for three weeks; at the end of which time three consecutive tests were negative. Four months later this patient became pregnant and since then has been delivered of a normal child. I feel that we can safely rely on the Aschheim-Zondek test to determine the presence of metastasis and in this way not deprive a patient of the possibility of future offspring.

DR. F. A. L'ESPERANCE, Northampton: Will the length of pregnancy make any difference in your findings as regards the number of cubic centimeters from the level of the sodium iodide in the bladder to the placenta?

DR. SCHUMANN: *Mr. Chairman*—With regard to Dr. Parvey's statement, I did not say anything about hysterectomy. The treatment of mole is immediate removal of the growth through the vagina possibly,

but better by abdominal hysterotomy, under local anesthesia. It is almost needless to say that all such cases should be closely watched, with periodic Friedman tests, to determine the possible signal of chorionepithelioma.

With regard to Dr. Boland's question, our reason for using only 40 cc. is so as not to distend the bladder and so obscure the shadow of the placenta. The average female bladder contains about 140 cc. to distention.

With regard to the gentleman's question as to the duration of pregnancy, I do not know. I haven't had any opportunity to examine these patients before the end of the seventh month by this method and I am almost certain that in a pregnancy earlier than during the sixth or seventh month the test would be of little value because the head is so high anyway. But since cases which are of the severe bleeding type usually occur somewhere between the seventh month and term, all that have come under our observation have been at this time.

I beg to thank the Society and Fellows for the reception of my paper.

CHAIRMAN KICKHAM: I feel more indebted than ever to Dr. Schumann, because as I said in the opening remarks, he is not only a great surgeon but a perfect gentleman and a good fellow thrown in.

The third paper is on "Hospital Puerperal Sepsis." There is no subject that is more important than sepsis. We have the good fortune of having a gentleman talk to us who had the handling of one of those awful epidemics, Dr. George M. Shipton:

HOSPITAL PUERPERAL SEPSIS*

BY GEORGE M. SHIPTON, M.D.†

Mr. Chairman and Members of the Section:

WITHIN the past few months we have had the opportunity of seeing, in a really worth while moving picture, the life of Louis Pasteur. This dramatization was the source of comfort to the women of today in the thought that they are not living in an era of "Child Bed Fever" and physicians antagonistic to scientific progress. But for those of us actually engaged in the practice of obstetrics, the reflections stimulated by this thrilling narrative are not so happy.

For, although we first learned when we were students the story of Pasteur and his great contribution to our specialty, and although as interns and later as physicians we have never passed a year without hearing or reading a paper on obstetrical asepsis, the fact remains that we still have outbreaks of this dread disease.

Therefore, with no idea of bringing to you any facts that have not been known for years, but rather, with the hope that by repetition and frank discussion, we may all become constantly aware of this danger, I wish to present the experience through which we passed in a general hospital a year ago.

The unfortunate part of these stories about outbreaks of disease is that they happen to the other fellow and our attitude is too often one of sympathy for him and self-congratulation over the fact that we personally have not been affected. Not until disaster actually strikes home do we consider the lessons to which we have listened for years without actually learning anything. Many of us can remember the difficulties encountered in enforcing, in our general hospitals, the practice of wearing sterile gloves for obstetric examinations and deliveries. For the purpose of emphasizing the many angles of puerperal infection in a general hospital may I present our story as it was developed.

On the morning of February 16, 1935 I was asked by one of our interns to see a private patient whom he had delivered in the absence of her physician six days before. She was a para ii with a story of two days' illness with chills before admission. She had been delivered spontaneously one hour after admission. That same evening her temperature was 103° and had swung up and down with chills until I saw her on her sixth day with 104°, a rigid abdomen, and a septic rash. A blood culture taken remained negative but a urine culture showed nonhemolytic streptococcus. She died the next day.

While studying her chart I remarked that it looked like a streptococcus infection and that we certainly did not want that to get loose in the maternity wing. The floor supervisor assured me that the patient was completely isolated but, since I was interested in the possibility of any infection, would I please look at some other charts. Whereupon she produced the records of five patients all in charge of different physicians and all running high temperatures. Although, at the time, I had several patients on the floor and had made rounds at least twice a day, this was my first knowledge of the condition. A quick check-up among the men involved revealed the fact that each one was ignorant of any of the other sick cases. In other words, although there had been six very ill patients on a floor, the normal load of which is twenty women, the entire picture was known to the nurses only. Ridiculous as this sounds it is a situation possible in any general hospital having a large courtesy staff, each member of which feels that he must work out his own problems.

On February 20, we sought the advice of Dr. Goethals of Boston who happened to be in the neighborhood. While he did not feel, from a study of the charts, that there was any evidence of a hospital infection, he did suggest a change

*Read at the Annual Meeting of the Massachusetts Medical Society, Section of Obstetrics and Gynecology, Springfield, June 8, 1936.

†Shipton, George M.—Obstetrician, House of Mercy Hospital, Pittsfield, Mass. For record and address of author see "This Week's Issue," page 845.

in our technic, namely, the wearing of masks over mouth and nose by both physicians and nurses at all times that the perineum was exposed for any purpose whatever. Like a great many general hospitals, we had been masking for deliveries and operations only. On the advice of several members of the active staff, the hospital management declined to adopt this suggestion for fear of terrorizing well patients.

Two days later another case was delivered and promptly began to run a high temperature. She was discharged on her thirty-first day to convalesce at home with a diagnosis of pyelitis, cystitis, and septicemia.

Laboratory work on the sick cases showed streptococcus or hemolytic staphylococcus in the blood, or urine or both. March 2, a para ii was delivered one hour after admission. Twenty-four hours later, her temperature was 101°; the next day it was 105°; on her ninth day a posterior colpotomy produced a pint of pus. She died on her twelfth day. Urine culture showed hemolytic streptococcus.

Not only the hospital staff, but the general public became aroused. Rumor credited the hospital with at least one maternal death a day with totals running as high as twenty-five to date.

March 13 a primipara was delivered who was apparently well in every way; with her, during labor and at delivery, was a relative who had been associated with the fatal streptococcus emergency case admitted 4 weeks before. On the third day this patient began to have chills; on her eleventh day she died of septicemia.

An investigation by two epidemiologists from the State Department of Health brought the information that the entire difficulty was a matter of coincidence and nothing could be done about it. Several days later they telephoned the order for masking at all times. This was just four weeks after Dr. Goethals had made the same suggestion and it was turned down.

During the months of February and March there were sixty-eight deliveries with sixteen, or 23.5 per cent sick patients and four, or 5.9 per cent dead.

Of the four cases dying, one had nonhemolytic streptococcus in the urine with negative blood culture; one had hemolytic streptococcus in the blood and a negative urine; one had hemolytic staphylococcus in the urine and no blood culture; and one had pus in catheterized urine but no urine or blood culture.

Of the other 12 nonfatal cases, 5 showed B. Coli and 2 showed a mixture of staphylococcus and streptococcus in the urine. There were no positive blood cultures in this group.

Upon questioning the men doing general practice it was learned that there were a very unusual number of streptococcus conditions in the community, namely, streptococcus throat, erysipelas, and scarlet fever. Unfortunately only the last is reportable to the Health Department, and therefore accurate numbers can be given only on the scarlet fever cases, of which there were fifty during this period.

Correspondence showed the same condition throughout the East. In other words we were being besieged by a vast army of streptococci. So great was the surrounding peril that one prominent Boston surgeon declined to operate except on emergency cases for two months, postponing 153 private cases; but deliveries cannot be postponed and the situation had to be met.

Nose and throat cultures were done on the 15 physicians involved, and the entire staff of 11 obstetrical nurses. Of the 15 nose cultures all 15 physicians showed hemolytic staphylococcus; of the 15 throat cultures 9 showed hemolytic streptococcus; 2, nonhemolytic streptococcus, and 2 hemolytic staphylococcus in the nose and hemolytic streptococcus in the throat. These were the identical organisms recovered from the fatal cases and bore out the fact that the community was infected.

Fortunately there was a new and so far unused wing of the hospital and we decided to make all of our changes at once. On March 20, we opened the new wing, carrying over only instruments which could be sterilized by boiling and otherwise using entirely new equipment. A completely new crew of nurses was installed.

Through the cooperation of the local paper, attention was called to the prevalence of streptococci in the community and the public was urged to protect expectant mothers by separating them from contact with any possible source of infection. This produced remarkable results in that patients immediately began reporting such contacts and asking advice. One patient who was booked for a cesarean in two weeks, called to say that she was caring for a mother who had erysipelas. The mother was immediately transferred to the contagious hospital, the patient was operated upon at term, and both mother and child are living today.

No patient was admitted to the maternity wing without a clean bill of health. At 2 o'clock one morning a private patient presented herself and the admitting nurse noticed a running nose and red eyes. The patient insisted that it was the result of labor pains. The hospital superintendent was called from her bed to give a decision. She agreed with the nurse, and in spite of an argument that awakened several patients, the woman was put in isolation and delivered there. Twenty-four hours later the patient presented a typical case of measles.

Masking was absolutely enforced, and visitors were limited and those few were closely scru-

tinized. No visitor was permitted to call on a patient in the old wing and then go over to the clean department. Physicians making calls had to visit the old wing the last thing before leaving the hospital.

Although the Health Department figures showed scarlet fever enduring for the next two months, and the general practitioners reported the persistence of other streptococcal conditions in the community, no sick cases developed in the new wing and we were able to move back to a renovated old wing in a month.

The experience has given us several aids in the control of puerperal sepsis.

1. A great deal can be accomplished by educating the public to the relation between community illnesses and maternal infections.
2. The organisms are carried in the nose and throat and masking at all times that the perineum is exposed is absolutely necessary.
3. Suspicious or sick patients should be admitted to isolation.
4. Visitors to obstetrical wards must be limited.
5. There must at all times be frank discussion and cooperation among all men using a maternity department and the hospital management.

None of these ideas are new; I have had no idea of teaching anything.

My sole purpose in this presentation is to emphasize by repetition that which we have all heard but which seems unimportant until after we have been in trouble.

I am deeply indebted to the hospital management for the use of their correspondence, and laboratory data, and to the attending physicians for permission to study their case histories.

As a public health measure I should like to lay before you for discussion, the advisability of requiring that all streptococcus conditions be made reportable.

DISCUSSION

CHAIRMAN KICKHAM: Dr. Shipton has given us a delightful paper and one that is very important. Before opening the discussion, it is customary at this time to ask the Nominating Committee for a report.

DR. BOLAND: After due deliberation Dr. Almy, Dr. D'Errico and I have decided to elevate our able Secretary, who has performed so well this year, to the office of Chairman of the Section, and to appoint Dr. Roy J. Heffernan of Boston as Secretary.

CHAIRMAN KICKHAM: Dr. Raymond S. Titus has been nominated Chairman and Dr. Roy J. Heffernan, Secretary. All those in favor say "aye"; those opposed "no". It is voted.

Dr. John C. Fisher of Boston will please open the discussion of Dr. Shipton's paper.

DR. JOHN C. FISHER, Boston: *Mr. Chairman and Members of the Section*—

I doubt if there is any maternity hospital having cared for patients over a period of years that has not had an experience similar to that Dr. Shipton has just related. His paper deals with the epidemic phase of the problem.

Sepsis, a Greek word meaning putrefaction, in our language means the introduction of putrescent material or bacteria into the blood stream. It therefore includes generically all forms of septicemia, as well as infections, local or general. The puerperium begins with labor and ends when involution of the uterus is complete. Puerperal infection (infection meaning to put into or stain) is a pyogenic bacterial invasion incidental to this period, the portals of entry being wounds in the perineum, vagina and cervix, the placental site and cracks in the nipples. It may be sporadic or epidemic. *Epidemic puerperal infection in hospital practice* would be, I think, a more fitting title to Dr. Shipton's paper.

Local infections do not ordinarily cause death except through embolism following thrombophlebitis or by becoming generalized. Seventy per cent of generalized puerperal infections or septicemias, according to statistics obtained from the Massachusetts Memorial Hospitals, are fatal. These data were obtained from a series of 41 cases occurring at the hospital between 1924 and 1936. While positive blood cultures were not obtained in all cases, nevertheless their clinical course presented a picture of septicemia. The absence of positive blood cultures in many of these cases is probably because the invading organism was of the anerobic type showing no growth on exposure to air. In cases with positive blood cultures the hemolytic streptococcus was found most often. The colon bacillus when found was associated with the hemolytic streptococcus. Only one case showing a positive blood culture of *Streptococcus viridans* recovered.

The death rate from puerperal sepsis in the United States is about 25/100 of 1 per cent, or 40 per cent of the total maternal mortality; about 20 per cent of all maternal deaths are chargeable to criminal abortion. The morbidity rate is conservatively about 15 per cent.

The incidence of puerperal septicemia at the Massachusetts Memorial Hospitals in 16,752 deliveries from 1924 to 1936 was 24/100 of 1 per cent, or a mortality rate of 17/100 of 1 per cent.

The majority of cases occurred during the winter or early springtime, bearing out Dr. Shipton's observations that with acute upper respiratory infections there is a definite relationship. About 20 per cent of individuals harbor streptococci in their throats. Streptococci may be present in the vaginas of pregnant women but apparently according to studies made by Ronald Hale (*J. Path & Bact.* [Nov.] 1935) only a particular strain of *Streptococcus hemolyticus* is chiefly responsible for puerperal septicemia. This strain is not found under normal conditions in the vagina before or after delivery. Seven per cent of normal individuals are nose or throat carriers of this strain. From this it would appear that *Streptococcus hemolyticus* infection is not endogenous except possibly through entrance into the blood stream from the patient's own respiratory tract, that is, the organism is almost or always introduced from without. In view of this, I fail to see the practical value of reporting all streptococcal conditions to the health department. I believe far more might be accomplished through instruction of the expectant mother by her physician.

The majority of sporadic cases in this series already referred to were subjected to some form of operative manipulation or suffered from anemia, toxic or otherwise, which evidently caused a general

lowering of resistance, while the epidemic groups included patients who had normal deliveries. I am of the opinion that some of the sporadic cases are due to endogenous infection and I am convinced that the majority of cases are infected directly by attendants (physicians and nurses) or indirectly through nursing utensils.

A few years ago I observed an unusual number of cases of acute mastitis in the wards of our maternity department occupying one floor of the building, while on the floor below there were none. I thought at the time that possibly a difference in method of breast care was responsible for the contrast, but as I look back now I am of the opinion that some pyogenic organism having acquired a predilection for the lacerating breast was freely carried from one cracked nipple to another by the undergraduate nursing personnel.

There has been no epidemic outbreak in our hospital for the past eight years and I believe that discontinuing the use in the delivery room of the Kelly pad, the wearing of gloves in scrubbing and preparing the patient for delivery, masking in the delivery room, constant watching by the resident for evidence of skin and respiratory infections among the nurses and prompt isolation of infected patients have been largely responsible for this absence of infection.

On the employment therefore of strict asepsis in the delivery rooms, a reduction in the incidence of early operative interference, good operative technic when interference is necessary, the prevention of anemia, efficient nursing, and instruction of the expectant mother in prophylaxis, may we hope in the future to lessen the incidence of puerperal infection in hospital practice.

DR. JOSEPH W. O'CONNOR, Worcester: *Mr. Chairman and members of the section:* When the Chairman asked me to participate in the discussion of Dr. Shipton's paper, I accepted with mingled emotions of pleasure and apprehension; pleasure, because I knew it would be a pleasure to discuss a paper that Dr. Shipton in his usual thorough manner would prepare, and apprehension lest Dr. Fisher, Dr. Shipton and I be branded as rugged New England individualists whose opinions are not always acceptable to those who have to listen to them.

As I heard Dr. Shipton read his paper today, I was impressed with the courage it takes for a man to make a report on such an epidemic as occurred under his observation. At the meeting of the Section of Obstetrics at Cleveland in 1934, while discussing the paper of Dr. B. P. Watson of the Sloane Maternity Hospital of New York, Dr. DeLee made the statement that, of authentic reports of 29 epidemics of puerperal sepsis in hospitals which he had collected, "only one hospital had the nerve, the scientific love for verity, to report the epidemic and that hospital was Dr. Watson's."

In 25 years of active obstetrical practice I recall reports on epidemics as being very rare occurrences in obstetric literature. A few months ago some of us here present heard the fine report made by Dr. John T. Williams on "Puerperal Sepsis" at the Boston City Hospital. Dr. Shipton's paper marks a milestone in the annals of this Section because it brings us as a group before a jury of our peers for a review of our aseptic policy in the conduct of our obstetric practice, whether we be specialists or general practitioners who still do obstetrics.

Of the striking features which Dr. Shipton has so graphically described, first, is the high incidence of sepsis during two months of the year; and, secondly, the frequency with which certain types of organisms were found in the upper respiratory passages of those who were in attendance on these cases. We need not chide ourselves for harboring such organisms for it is my opinion that at certain times of the year none of us escape the possibility of being a potential source of infection or death to the patient who at the moment has the misfortune to be under our care; but we should realize that because of that inescapable condition we have the added responsibility of taking special precautions to protect our patients from the organisms which we innocently harbor.

During the winter months it is very obvious that the upper respiratory tract of the human being is the habitat of especially virulent organisms. Those who have made studies on carriers have given us rather interesting figures. Davis in 1921 demonstrated that the hemolytic streptococcus was present in the nose or throat of 45 per cent of apparently healthy individuals. He and Pilot two years before had demonstrated that it was present in the tonsillar crypts of 100 per cent of the cases studied. Hare in 1934 showed that virulent streptococci may be obtained from noses and throats of individuals with respiratory infection even when symptoms are slight or even absent.

It seems obvious from this paper as well as from previous reports that the most commonly found potential pathogens are various types of the streptococcus and staphylococcus which at certain times of the year may be regarded as almost universal inhabitants of the respiratory tract of the physician, nurse and patient.

When hearing reports and papers dealing with hospital puerperal sepsis, one is impressed with the fact that no one charges himself with gross errors of technic such as may occur from carelessness in preparing of hands, the instruments, the gloves and the other impedimenta used in the process of delivery. Infection in hospitals from such sources is probably very rare and I believe that for the most part we can in conscience give ourselves a fairly clean bill of health on this score. I fear, however, that sometimes, after we have prepared the patient and ourselves in the most approved aseptic manner, contamination of the sterile hands, table and instruments may occur from bacterial flora of the upper respiratory tract by inadequate masking of our mouths and noses. How often have we seen distinguished and conscientious operators standing over an open abdomen with mouths carefully covered with masks while the equally infectious nose is left naked? For myself, I cannot see that there is any choice in having one's abdominal cavity infected by secretions from the mouth or secretions from the nose. If I were the victim from an esthetic standpoint alone, I would prefer the former.

The type of mask used occasionally deserves criticism. I think it will be conceded that masks consisting of a few layers of loosely woven gauze are not adequate protection from a strictly aseptic standpoint. Personally I prefer a mask made of finely woven broadcloth in two or three thicknesses over the mouth and nose as it affords as great a degree of protection as can be expected from a pervious textile.

In addition to the process of masking at the time of delivery I believe, as Dr. Fisher stated in his discussion and Dr. Goethals suggested to Dr. Shipton, that maternal mortality and morbidity would be greatly improved if those who have anything to do with the exposed genitalia of the patient were adequately masked at all times.

Our greatest difficulty will be in keeping away from our puerperal patients, especially in the months of high incidence of respiratory infections, all those who give evidence of harboring organisms which we

know to be dangerous to the puerperal patient. We may succeed in protecting the patient from ourselves and those who are associated with us in their care but we cannot protect her from the laity with whom she must come in contact. It may be helpful to advise our patients as part of our prenatal care to keep out of crowds such as are encountered in stores and motion picture houses but it will not solve the problem, which, as Dr. Shipton and Dr. Fisher have indicated, is a very grave one.

Puerperal sepsis takes a high toll annually. The fifteen state study over a three-year period made by the Children's Bureau shows that 40 per cent of the deaths in this country from puerperal causes are due to puerperal infection. We are unwilling to assume the responsibility of the high death rate incidental to abortions of all sorts, but we recognize that the prevention of this death rate is our solemn duty and we have pledged ourselves to keep it as low as is humanly possible.

At the Memorial Hospital, Worcester, we have had no epidemics of puerperal sepsis in the more than 25 years of existence of the maternity department. In fact, in reviewing the records for the past 25 years I was able to find only three cases of puerperal sepsis occurring in patients actually delivered in the maternity department.

DR. ARTHUR T. HERTIG, Assistant Pathologist of the Boston Lying-in Hospital: It is with the idea of reporting a somewhat unusual, small outbreak of puerperal sepsis in the Boston Lying-in Hospital that I am taking the liberty of adding to the discussion of Dr. Shipton's excellent paper.

There were two unusual factors in this small epidemic worthy of comment; one, the clinical course of the first patient from whom the other two patients undoubtedly contracted the disease, and the other, the means by which these patients were infected.

The first patient was a multipara who entered the hospital for the treatment of her toxemia. Induction of labor was attempted by artificial rupture of the membranes. Two days elapsed before the patient delivered following a three-hour labor. Just prior to delivery, her temperature was 101.5° but it fell to normal 12 hours later, only to rise to 102° by the end of the first postpartum day. During this day she was in a small three-bed "Well Ward" on the second floor. Because of the rise in temperature, pus and bacteria in the urine, and costovertebral tenderness, a diagnosis of pyelitis was made and the patient was isolated in the septic division on the top floor of the hospital. A diagnosis of questionable sapremia was also made. During the next two days, the patient's temperature gradually fell to nearly normal and accordingly she was transferred back to the original three-bed ward on the second floor. However, blood and vaginal cultures were taken just before transfer. Two days later, or on the fifth postpartum day (after she had been on the "Well Ward" for two days, with her temperature returning to normal, and *without showing clinical symptoms or signs of puerperal sepsis*), it was found that the vaginal culture showed practically a pure growth of *Streptococcus hemolyticus* while the blood culture was negative. Because of this objective bacteriologic finding she was readmitted to the septic isolation ward where she remained for thirty-three days, finally to be discharged fever-free to the care of her private physician. Because of her mild course, the clinical diagnosis of streptococcal puerperal sepsis was accepted with some reluctance. Final objective proof of the septic nature of the patient's disease was found during the microscopic examination of the placenta. Streptococci within leucocytes were demonstrated in the decidua and blood clot upon the maternal surface of the placenta. It is evident, therefore, that this patient must have been discharging countless numbers of hemolytic streptococci from the time of delivery, while suffering from what was apparently a bona fide pyelitis. Furthermore, for three of the first five postpartum days she was among well postpartum patients and was subject only to the routine care given such patients. This fact was later shown to be a factor in the infection of the two fatal cases to be mentioned briefly.

Five hours after the first patient was delivered, another multipara was normally delivered, following a 2½ hour labor, by another operator and in a different delivery room. There may or may not have been some of the same nursing personnel assisting at both deliveries. At any rate, the second patient was placed *next to the first patient* in the small three-bed ward on the second floor. At the end of the third postpartum day the second patient showed a sudden elevation of temperature to 102° with other signs and symptoms of puerperal sepsis. She was immediately isolated in the septic ward where she died of septicemia and generalized peritonitis due to the *Streptococcus hemolyticus* on her eighteenth postpartum day.

The day after the first patient was transferred to the septic ward for the second and final time (the fifth postpartum day for that patient) a normally delivered primipara was admitted to the large sixteen-bed ward next to the original three-bed ward, both wards having the same nursing personnel. This third patient at the end of her fourth postpartum day suddenly had a chill with elevation of temperature up to 101.5° at which time a diagnosis of puerperal sepsis was made and the patient transferred to the septic ward. She ran a rapidly fatal course with psychotic manifestations and died on her tenth postpartum day of hemolytic streptococcal endometritis and generalized peritonitis.

An epidemiologic survey of these three cases was immediately undertaken upon the appearance of the third case. It was found that all patients had been on the same ward or in the same nursing unit and that the use of perineal ice bags by the first and third patients was the etiologic factor in transmitting the disease to the third patient. It is less clear just how the second patient contracted the disease, although it must be remembered that these ice bags were changed every four hours, and were handled as apparently noncontaminated objects; that is, they were carried by the nurses under their arms while collecting and distributing them. (This was actually observed by the investigators.) In addition, the ice bags were not sterilized after being used but were merely washed off, filled and covered with a single layer of clean gauze. Inasmuch as the ice bags by their nature and use were constantly cold and moist, they offered excellent opportunity for the continued existence of the streptococci. Hence there are any number of possible ways in which the second patient (next to the first unrecognized septic patient) might have been unknowingly infected since the extremely infectious nature of the lochial discharge of the first patient was neither appreciated nor guarded against.

Regardless of the exact means by which streptococci were transferred from the first to the second patient, it was evident epidemiologically that all three cases were related. Practical proof of this was shown by the cessation of the epidemic when the use of perineal ice bags was discontinued. Incidentally, throat cultures of the operating and nursing personnel involved were negative for hemolytic streptococci.

In conclusion, it may be said that the only reason for reporting this outbreak of puerperal sepsis

is the hope that it will emphasize two factors of importance; namely, the danger to other patients from atypical or subclinical cases of puerperal sepsis (possibly of endogenous origin), and that an orthodox (but really bacteriologically unsound) nursing technic—apparently harmless for many years—can be dangerous if the proper set of circumstances arise such as outlined in this brief report.

DR. ROBERT L. DENORMANDIE, Boston: I think Dr. Shipton really must be congratulated on reporting this outbreak. The only criticism I have to offer is in regard to the hospital management. I think it should be very severely criticized for not telling members of the staff there were septic patients in that hospital and for letting other patients come in without telling the staff of this condition, and for their refusal to mask and help Dr. Shipton to clear it up.

CHAIRMAN KICKHAM: I think Dr. Shipton's paper one of the most important we have had today. Of course, what Dr. DeNormandie said applies more definitely to the larger hospital or to a hospital which has Chiefs of Staff, and so forth. I agree with Dr. DeNormandie it was very hard, to say the least, to have those patients coming in and the hospital management not willing to cooperate, but in the larger hospitals where there are Chiefs of Staff I think these epidemics may be better controlled than in the smaller hospitals with each man delivering his own patient. I know in St. Elizabeth's, where I happen to be Chief of the Obstetrical Department, every patient—or any patient—probably that would be the better way to put it, who runs a temperature is reported to me as the Chief. Now I make a visit on the floor every day even though not on active duty. I do not do any actual delivery now. I think sometimes if the Chief of Staff would go on the floor with the understanding that all things abnormal should be reported to him, he would have better control of what might be happening. This has proved so important that it resulted in stopping an epidemic in our own institution. Beginning on the first of May there was a change of personnel involving two or three of the nurses and the resident interns. In two or three days while a particular man was on duty, a patient was noticed to have a temperature. We did not mind one temperature, but when in the matter of a week we had three patients with temperatures ranging from 101° to 102½°, and one of 104°, then we began an intensive investigation.

In our hospital it has been customary for years that all nurses and all doctors are masked at all times they are in contact with patients, whether the perineum is exposed or not; the nurses wear masks even in the wards; all patients are masked when in contact with their babies. We began, as I say, an intensive investigation and the first thing we did was to begin taking cultures. On culturing we found this new intern had a positive streptococcus culture. Immediately, of course, he was put out of that particular department. We found nothing else and our epidemic stopped immediately. Fortunately the three cases we had quieted down. I mention this because I feel our trend of watchfulness there is important; that every case be reported to somebody in charge, so that one in authority will know there is more than one, just as Dr. Shipton feels and Dr. DeNormandie feels should be done; secondly, at the very beginning of the epidemic, when more than one patient shows temperature, then an intensive investigation, and, of course, carrying on as Dr. Shipton very well said, and as I feel we all agree, with absolutely aseptic precautions so far as we can in contact with the patients at all times.

I feel though that Dr. Hertig has brought out an intensely important thing; that is, that an atypical case might occur despite every precaution we might bring forward to prevent such things. Therefore, while I do not wish to minimize the importance of anything we as obstetricians can do, I think there is an irreducible minimum of infections and sepsis due to such cases as Dr. Hertig reported, namely, the atypical case that might start and spread before you can surely realize what is the causative factor.

I will ask Dr. Shipton to close his paper.

DR. GEORGE M. SHIPTON, Pittsfield: I wish to express appreciation for being allowed to come here and present this paper; also I extend my thanks to the gentlemen who have been so kind as to discuss it. Two weeks ago Dr. Fisher and Dr. O'Connor threatened to take me for a ride on this paper and whether they had an unusually good time here this afternoon or not, they weakened and I think let me off very lightly and I appreciate it very much. In answer to Dr. DeNormandie's criticism, I do not want to blame this entirely on the hospital management. If you remember, I said in the paper "due to the advice of several men on the active staff, this matter was kept under cover and the masking was not permitted." One of the suggestions drawn from the paper that there should be more thorough cooperation among the members of the staff and the hospital management, I am happy to say has been brought about. We now have a set-up similar to the one our Chairman has described and ever since that has happened there has been absolute cooperation.

CHAIRMAN KICKHAM: *Gentlemen*—I thank you all for coming and we will adjourn until next year.

DIABETIC DEATHS IN BOSTON DURING 1935*

BY G. W. LYNCH, M.D.†

INTRODUCTION

NO person under 19 years of age died with diabetes in the city of Boston during 1935. Only 3.4 per cent of the 301 deaths among diabetics were deaths of persons under 40 years. These encouraging facts present a striking contrast to conditions 20 years ago. At that time any child who developed diabetes usually died within a year or two of the time of onset. Of deaths due to diabetes in Boston between 1895 and 1913, 19.8 per cent were deaths of persons under 40 years of age.

This survey represents an analysis of the deaths of all persons dying in the city of Boston during 1935 whose death certificates contained the word diabetes. Information concerning them was obtained from death certificates and was augmented by further facts found on hospital records or given me by the doctors who signed the certificates. The study includes

*This analysis of diabetic deaths in Boston was made under the auspices of the Massachusetts Tuberculosis League. The League was interested in ascertaining the nature of the problem of diabetes because tuberculosis and diabetes present epidemiologic and therapeutic problems of importance to public health.

†Lynch, G. W.—Junior Associate in Medicine, Peter Bent Brigham Hospital. For record and address of author see "This Week's Issue," page 845.

not only deaths which are listed as diabetic in the city's vital statistics, but also those which would be listed as other than diabetic because of the priority which other diseases in the same person have over diabetes in the Manual of Joint Causes of Death. In a recent study of diabetic epidemiology Joslin and Lombard showed that 13 per cent of cases with the word diabetes on the death certificate are otherwise classified. Another fact brought out by them is that 24 per cent of diabetics die without diabetes being mentioned on the death certificates. Diabetes ranks fairly high in priority among the joint causes of death but there are many paradoxical situations. When a diabetic woman dies following a cesarean section, the death is listed as one following a cesarean section. If, however, she dies as a result of an abortion it is listed as a diabetic death.

TABLE 1

CAUSES OF DEATH

Coma	41	(13.6%)
Arteriosclerosis	179	(59.5%)
Cardiac	91	
Nephritis	3	
Apoplexy	40	
Gangrene	41	
Cardiorenal	2	
Generalized	2	
Infections	54	(17.9%)
Bronchopneumonia	17	
Lobar Pneumonia	7	
Abscesses	5	
Carbuncle	4	
Pulmonary Tuberculosis	3	
Pyelonephritis	3	
Prostatic Abscess	2	
Appendicitis	2	
Infection of foot	2	
Cellulitis of leg	1	
Cellulitis of face	1	
Osteomyelitis	1	
Parotitis	1	
Mastoiditis	1	
Septic knee (postop. pneum.)	1	
Urinary infection (with septicemia)	1	
Peritonsillar absc.	1	
Gall bladder dis.	1	
Miscellaneous	27	(9.0%)
"Diabetes" or unclassified	9	
Cancer	8	
Valvular heart dis.	2	
Cirrhosis of liver	3	
Fracture of leg with sepsis	1	
Fracture of patella (pulm. emb.)	1	
Intestinal obstruction (with gall stone)	1	
Multiple injuries	1	
Insulin shock	1	

HOSPITAL DEATHS

Diabetes mellitus was mentioned on 301 death certificates in Boston during 1935. Of these 136 died at home and 165 died in hospitals. The hospital deaths were distributed among 23 hospitals, but 132 of the 165 died in the eight larger hospitals. Obviously most of the problems of diabetes can be studied from hospital experiences and the bulk of the material for study is concentrated in the larger hospitals.

NONRESIDENTS

Fifty-five of the cases were deaths of persons living outside of Boston, a factor which must be considered in evaluating death rates in a medical center.

NATIVITY

The large number of deaths among the foreign born is greater than would be expected from the per cent of foreign born in the city. Fifty-four and four tenths per cent of the deaths were among foreigners whereas only 29.3 per cent of the city's population in 1930 was foreign born. Ninety-nine of the 165 foreigners were Russian, Irish or Italian. In the 1930 census these countries were among the first four in the foreign born group.

SEX

A study of sex distribution reveals a surprising preponderance of females. The women outnumbered the men by more than 2 to 1—207 females, 94 males. The preponderance of females is especially striking in the group dying with diabetic coma in which there were 41 cases of whom 33 were females, a ratio of 4 to 1.

The increasing proportion of females among diabetics has been noted by Joslin. Of a thousand new cases seen by him during 1933-1934, 57.4 per cent were females. He mentions as possible factors the increasing attention given to females and their health so that milder cases may be detected more often among women, the higher incidence of obesity among women, and the influence of pregnancy. The last factor is brought out by Bolduan who showed that the preponderance of females among diabetics dying over 45 is marked among married and widowed persons but not among the single.

MARITAL STATUS

Single	42
Married	143
Widowed	109
Divorced	6

AGE

The average age of the whole group was 64.3 years, males 63.3 years and females 64.7 years. The most stimulating feature of the age distribution of the deaths is that no child died with diabetes. The youngest victim was 19 years old. The per cent of deaths in each decade is shown in chart 1. Chart 2 shows the age distribution of 1775 diabetic deaths in Boston between 1895 and 1913, made up from the figures reported by Dr. Hyman Morrison.

DURATION

The average duration of the disease was 7.4 years for the 197 cases in which there was definite information concerning this feature. There was a tendency for the use of "round numbers" in recording durations as shown by the fact that

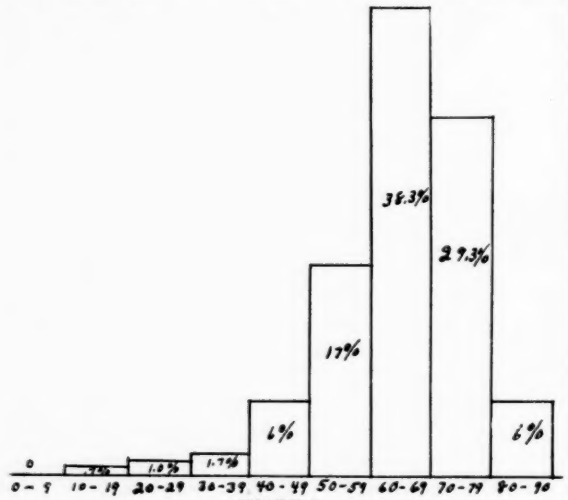

CHART 1.

1935.
Deaths by Decades.

there were 24, 19, and 16 cases of 5, 10, and 15 years' duration respectively as compared with 11, 0, and 2 cases of 6, 11, and 16 years' duration.

CAUSES OF DEATH

In studying the causes of death I have employed a classification devised by Dr. Howard Root for the analysis of the Joslin series and

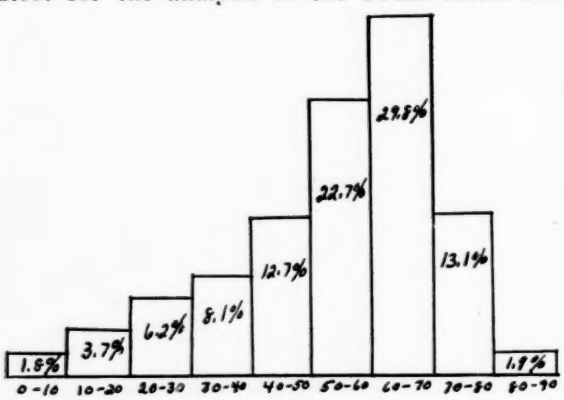

CHART 2.

1775 Diabetic Deaths.
Boston—1895 to 1913.
Age at death by decades.

also used by the Metropolitan Life Insurance Company in compiling the Joslin statistics of diabetic doctors. All cardiac deaths except those which are valvular or infectious are included under the heading of arteriosclerosis.

In table 1 there is a complete list of all the causes of death. A diagram in chart 3 shows the relative importance of arteriosclerosis, infection, coma, and miscellaneous causes.

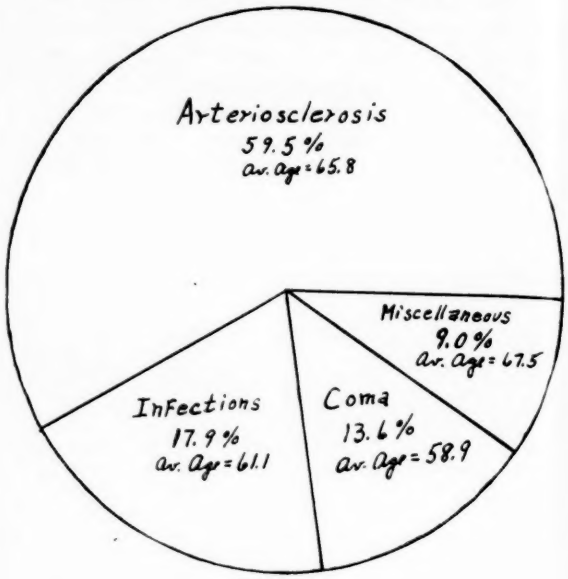

CHART 3.

Deaths Among Diabetics.
Boston—1935.
Total = 301.

ARTERIOSCLEROSIS

Arteriosclerosis was the chief killing agent, being responsible for 59.5 per cent of the deaths. Of the 301 deaths, 169 were attributed to arteriosclerosis. In this group the heart was of first importance with 91 deaths as compared with 41 deaths due to gangrene and 40 attributed to apoplexy. Of the 91 cardiac deaths 35 were considered as coronary occlusion and 2 more were certified as due to angina pectoris. The remaining 54 were cases of chronic myocarditis, hypertensive heart disease, or "cardiac decompensation". There were no cases of congenital heart disease, luetic heart disease, or pericarditis recorded. Two cases of valvular heart disease are included in the miscellaneous group. In the group listed as due to gangrene it has seemed fair to include cases in which the patients died of terminal pneumonia or septicemia obviously secondary to the gangrene.

INFECTIONS

Infections accounted for 17.9 per cent of the deaths. This is a reasonable figure in view of the well-recognized susceptibility of diabetics to infection. The surreptitious action of infection in precipitating or aggravating diabetes was well illustrated in one of the coma deaths. A 60 year old female was seen by a doctor who found that she had a carbuncle. She told him that she did not have diabetes and that only one week before she had had an urinalysis and had been told that it showed no sugar. A few days later when the doctor made his visit he found

her in coma, the urine contained a large amount of sugar, and she died in spite of insulin.

Of the 54 cases in the infectious group 24 were due to bronchopneumonia or lobar pneumonia. This group, of course, does not include pneumonias which were a distinctly terminal event in other conditions such as gangrene or apoplexy. There were only 4 deaths due to carbuncles and 3 due to tuberculosis, two well-recognized former enemies of diabetics.

COMA

There were 41 coma deaths, 13.6 per cent of the whole group. One might more properly say these people died *with* coma rather than *of* coma because of the fact that 11 had complicating conditions which of themselves might have caused death. The complications are as follows:

Fractured hip	1	Septic finger	1
Gangrene	2	Carbuncle	1
Bronchopneumonia	2	Septicemia	1
Lobar pneumonia	1	Hypoglycemia	2

It is fair to count the 2 cases of hypoglycemia as coma deaths because in both instances the hypoglycemia was a complication developing in the treatment of the coma.

Of the 41 coma cases 33 were females. I cannot account for this preponderance of females other than as in the discussion above under sex. Of course the number of cases in this series is small but a similar preponderance of females occurs in the series of coma cases treated by Dr. Joslin and his associates.

The average age for the coma group was 58.9 years, lower than the average for the entire series, but sufficiently high to indicate that coma deaths are rare among the younger diabetics.

MISCELLANEOUS

In the miscellaneous group there were 27 deaths. Nine of these were listed as "diabetes". They were cases so classified by the person who certified them and sufficient information was not available to make a more accurate classification. They might more properly have been called "unclassified" but they are deaths of persons with diabetes which seemed to play a major rôle in terminating their lives. The only information available on some of these was "he just passed out".

The number of cancer deaths was 8. This is a rather low figure for the age group which this series represents. However, it is a small series and, when a person dies with cancer, mild diabetes may seem so insignificant that it is not mentioned on the death certificate.

There were no deaths due to complications of pregnancy. There was only one death due to insulin shock, although hypoglycemia was really the terminal event in 2 of the coma cases. It is reasonable to assume that if they did not get coma they would not have died of hypoglycemia.

OPERATIONS

Forty-one of the people who died had operations during the terminal illness. No attempt has been made to select the cases which might be called operative deaths. Many of them were extremely poor risks, entering the hospital with disease which had progressed to a very advanced stage. Most of them were cases of gangrene.

AUTOPSIES

There were autopsies in 21 cases or 7 per cent of the whole series. All of these were hospital cases so that the percentage for hospitals was 12.7 per cent. This figure is quite low but probably about what would be found for any other disease similarly investigated. It is reasonable to suppose that the percentage of autopsies will be increased in Boston owing to the increasing interest in the treatment of diabetes and the more general appreciation of the value of autopsies. Outside of hospitals and outside of Boston, it will be easier for physicians to obtain autopsies, since Dr. Shields Warren, pathologist at the New England Deaconess Hospital, has agreed to arrange for such examinations anywhere in the state of Massachusetts.

PREVENTABLE DEATHS

There is no justification for attempting to select the cases which might have been saved because all the circumstances surrounding a death are not recorded on the death certificate or on the hospital records. Certainly diabetics cannot be expected to live forever. This study shows that most of them live to a reasonable age (av. age 64.3 years) and do not die of diabetes *per se*.

However, coma deaths must always be considered as preventable just as are deaths from diphtheria. Some of the outstanding features of the coma deaths are listed.

1. The average dose of insulin was relatively small and in some cases "buffered" by unusually and unnecessarily large amounts of intravenously or subcutaneously administered glucose. On the other hand 2 patients died from hypoglycemia developing during the course of treatment of coma.

2. Failure to utilize laboratory tests seemed to be a contributory factor in many cases. Some coma cases had no blood chemistry determinations, others had only a single blood sugar report, and in a few cases the blood chemistry reports were not available until after the patient's death.

3. Delay in seeking treatment was responsible for several deaths. Some had been in severe acidosis for long periods before going to the hospital. Failure on the part of the family to realize the seriousness of the condition caused

the delay in many instances and one patient relied upon a cultist until it was too late.

4. In a few cases no insulin was used because of a feeling that the patient was beyond recall or because of objections on the part of the patient or the family.

5. Some patients died in spite of what must be considered excellent treatment although again treatment was begun too late. Diabetic coma is a severe endocrine crisis which certain patients are not prepared to withstand unless diagnosis is established and treatment begun early in its course. We must expect a certain number of deaths just as we do in major surgical procedures conducted in a meticulous manner.

Following the discovery that nearly half (132) of the total deaths from diabetes in Boston occurred in eight hospitals the importance of the hospital management of diabetes became obvious. In preparation for a meeting of the representatives of these hospitals the records of the deaths in which the likelihood of improvement in treatment might be possible were closely scrutinized and abstracted. The cases were so prepared as not to disclose the identity of the patient or the hospital and were passed about to the different representatives and an evening given over for their discussion. The opinion of those present was unanimous—that for the year 1936 what might in the end do the most good for diabetes in Boston would be concentration upon improvement in hospital treatment. As an outgrowth of the discussion, the representatives of these hospitals felt that in each hospital arrangements should be made so that it would be possible to secure laboratory data more promptly and a better systemization in each hospital of the treatment which the staff of that hospital believed desirable for coma.

CONCLUSIONS

During 1935 there were 301 deaths among diabetics in Boston. No child died with diabetes and 3.4 per cent of the patients were less than 40 years old at death. The average age was 64.3 years. Two-thirds of the victims were females. More than one half of the patients died in hospitals. The causes of death were arteriosclerosis 59.5 per cent, infections 17.9 per cent, coma 13.6 per cent, and miscellaneous 9.0 per cent.

The results of treatment of diabetes have greatly improved in the last 5 years. Further improvement depends upon the following:

1. Earlier treatment of coma, gangrene, and infections.
2. Reports of blood and urine in diabetic emergencies within one hour of admission to the hospital.
3. More postmortem examinations.
4. Reduction of postoperative mortality.
5. Prevention of deaths under 40 years of age.

FORENSIC MEDICINE IN EUROPE—LEGAL MEDICINE IN AMERICA*

BY KURT E. LANDÉ, M.D.†

IN trying to give a picture of forensic medicine as it is practiced and taught on the European Continent, one might be tempted to treat the present structure of this specialized branch of medicine from a historical angle. But such an undertaking would lead too far afield and include too many unnecessary details.

I must therefore restrict myself to a short survey in which I think it is better not to lay great stress on the differences between the individual countries but rather to point out the common elements in the Continental systems of forensic medicine. Only a few details, which perhaps are foreign to American thought or very divergent from the American administration of justice, need explanation.

Forensic medicine involves all the questions where medical science comes into contact with the law. But this is too general a definition to explain sufficiently the manifold duties which must be performed by the European medical examiner or judicial physician. Enumeration of the different kinds of work to be done for quite different law enforcing agencies will give a clearer impression.

In order to assist the police in the detection of various crimes, autopsies must be performed in the institutes of forensic medicine, where the medical examiners in the larger cities are usually located. These must be carried out on all cases of homicide and whenever the slightest suspicion of an unnatural cause of death arises. Whether these medicolegal postmortem inspections can be performed by the medical examiner's own authority or whether he has to wait for the order either of a competent judge or of the district attorney depends upon the rules and regulations of the different cities or states.

It may be remarked here, that, wherever a special homicide squad is organized by the police, the medical examiner is an official mem-

*From the Department of Forensic Medicine, New York University Medical College.

Read before the faculty and students of Harvard University Medical School, May 21, 1936, under the auspices of the Department of Legal Medicine.

†Landé, Kurt E.—Instructor in Forensic Medicine, New York University College of Medicine. For record and address of author see "This Week's Issue," page 845.

ber of that body in so far as he has to be called to the scene of a crime. The question of whether cases of sudden, unexpected death, by suicide as well as from natural or violent causes, come under the jurisdiction of the medical examiner is likewise a matter of local or state regulation. These cases include all persons who die on the street or are fatally injured by motor cars or accidents of any kind. Although no such law exists in Germany, in the Berlin Institute these cases must be examined as a matter of routine.

In Austria a law requires the autopsy of every patient dying in a hospital. Only when the suspicion arises during the autopsy that the death may be due to a crime, must the district attorney or the police be notified. The autopsy then under way must be stopped until the body is taken over by the police and it must be completed by the medical examiner, a competent judge or district attorney attending, if desired.

Naturally the autopsy alone cannot always explain the cause of death. To determine this, one must frequently await the result of the microscopic and chemical investigations. Almost every forensic institute in Europe employs one or more histologic technicians and has a special toxicologic and chemical department. The chief of the latter, who generally has a Ph.D. degree in chemistry and toxicology and very often also an M.D. degree, not only has to do the chemical and toxicologic parts of an autopsy, but is also kept busy by various examinations of suspicious material sent in by the police or by private individuals. Furthermore, since the examination of the alcoholic content of the blood of drunken drivers or pedestrians is widespread in Europe, the Widmark test usually belongs to the sphere of the forensic chemist. The chemical and toxicologic interpretations of the results of examinations of autopsy material are usually given in court by the chemist himself. He explains his methods, their reliability and his findings in the special case as compared with his former experience with similar material. But the medical examiner who performed the autopsy must make clear the medical significance of the chemist's findings. It is his special task and duty to discuss the problem in question and to come to a final forensic conclusion for the consideration of the judges and the jurors. From this it is easily understood that only a thorough toxicologic knowledge and experience enable the medical examiner to meet these requirements. There are very few men who, like H. Zangger in Zürich to whom legal medicine is indebted for a number of fundamental chemical and toxicologic investigations especially in problems of industrial poisoning, combine the experience and training of a chemist and of a medicolegal pathologist.

In addition to problems concerning pathology, chemistry and toxicology, there are bacteriologic and especially serologic questions of great practical importance which must be answered by the student of forensic medicine. The criminologic examinations of dried blood stains, of hairs and of sperm stains play a significant rôle in the daily routine work of every forensic institute in Europe. The possibility of excluding certain blood group combinations in cases of questionable paternity by means of the four classical Landsteiner groups and the newer subgroups has created new problems. In almost every European country the courts, in a steadily increasing number, use this method as evidence in legitimacy and the resulting perjury cases.

The scope of criminologic problems which may be solved by the medical examiner in Europe does not end with the above-mentioned laboratory work. Dependent upon the special inclination of the director of the institute it is common practice in forgery cases to compare handwritings, signatures and important business letters. Sometimes the professor is a ballistic expert or a specialist in problems of identification or of electropathology. Very often these specialties originate as a result of a difficult practical case in which the police, in Europe not less overburdened than here, seek the support of forensic science for the solution of some new and unexpected problem.

In still another field the co-operation of forensic medicine with the police and the courts has become indispensable in many European countries, namely, in forensic psychiatry. Questions of personal responsibility in civil and criminal lawsuits must be decided. The credibility of witnesses must be examined. Briefly, the whole work which must be done by the alienist in this country belongs to the medical examiner in Europe. As an illustration, in the Institute for Forensic Medicine in Berlin, an examination was made of the credibility of all juvenile witnesses of greater Berlin who were obliged to appear in the courts in cases of sexual crimes of every kind. As a routine requirement an opinion also had to be obtained about many of the defendants in these cases. As a rule, these persons came to the Institute never less than three times, often more frequently. But not infrequently they had to be visited in a lunatic asylum, in one of the psychiatric clinics or in the prisons. Thus a tremendous amount of psychopathic and psychiatric material was reviewed for practical and research purposes. All kinds of drug addicts with their special misdemeanors and crimes are also seen by the forensic specialist.

Many of the problems so far described, especially autopsies in accident cases and the psychiatric examination of patients, are also of

great significance for the compulsory accident, health and other forms of social insurance, found as they are in some form or another in almost every European country. Therefore, not only the civil and criminal law courts and the police but also the different boards of the social insurance groups seek expert advice from the institutes for forensic medicine or from the individual medical examiner. Likewise, the private insurance companies consult the university institutes more and more frequently in complicated cases.

I may finally add that in some countries the medical examiners are also charged with the duties of prison physicians and that they have to examine those persons who claim not to be in a position to appear in the courts or to stand a prison term.

I have not covered the ground completely, but at least I have outlined the essential functions of forensic medicine as found in Continental Europe.

In view of the multitude of different and partly heterogeneous topics belonging to the domain of forensic medicine in Europe, the following three questions may now be asked:

1. Why are so many and such different fields included in forensic medicine?
2. What form of organization guarantees smooth functioning of the medicolegal machinery?
3. Where and how is the necessary training for this important specialty acquired?

As to the first question, it may help to go back into history in order to explain very briefly the development which resulted in modern forensic medicine. In the codices of Charles V, the so-called Lex Bambergensis of 1507, and the Constitutio Carolina, elaborated by Johann von Schwarzenberg, medical evidence was made imperative through more than one provision. During the medieval centuries and later on, numerous cities had physicians in their services as health officers. Under given circumstances these physicians also had to render expert opinion in the courts about medical questions, even if it concerned only the trial of a poor witch.

From the very beginning there was a close connection between the medicine practiced by the official medical officers and the courts and the police. This close connection did not change when, in the course of the nineteenth century, a separation of forensic medicine from public health or hygiene took place. This change started in the universities of Austria under the influence of the Viennese school and in France under that of Paris and was followed by Sweden, Italy, Germany and Switzerland. It became customary for the courts to consider as experts in forensic medicine only those physicians who, in the cities with universities, were the professors of forensic medicine, or, elsewhere, as health officers, were in charge of forensic problems. When, in the beginning of the twentieth century, in Prussia, forensic medicine was included as a compulsory lecture in the curriculum of the medical students, the state in several cases appointed the local health officer as professor of forensic medicine. He also acted as official medical examiner.

As new problems appeared, such as the significance of serology for medicolegal questions, the courts and other governmental boards appealed, as usual, to the forensic institutes for their expert opinion. A similar situation partly explains why forensic psychiatry is practised to a large extent by the medical examiners. The supervision of the psychiatric hospitals belonged to the sphere of the health officers, at least in Germany and Austria. In some countries, as in Italy, psychiatry is not practised by the medical examiners, and some of the elder professors of the Viennese school, who came directly from the field of pathologic anatomy, refused to work in psychiatry.

A more recent example of the natural expansion of forensic medicine is the inclusion of industrial hygiene, or more accurately industrial pathology, in the medicolegal field. Dr. Zangger of Zürich was one of the first men, who, owing to his practical experience at the medicolegal autopsy table, saw the ever-increasing importance of industrial accidents. Especially the dangers of the newer industrial chemical solvents, whose composition was usually kept secret, attracted his forensic curiosity. It was in his institute that fundamental investigations about the danger of acute or chronic industrial poisoning were carried out systematically for the first time.

I only refer briefly to the duties concerning the investigation of motorcar accidents and of industrial accidents of every kind and to their far-reaching juridical consequences. All these practical and scientific problems fall automatically into the field of forensic medicine, because of its existing organization.

This brings me to my second question, namely, what form of organization guarantees smooth functioning. It would take too much time to give a detailed description of the medicolegal organization of every country in Europe, but I think it worth while mentioning the following typical component parts. In cities where there are universities, the director of the institute of forensic medicine is either the only or one of several medical examiners for the district. Such an appointment is automatic, because the universities are state institutions and the incumbent of every professorship is a state official. If there are several medical examiners, as in Vienna, they are generally associated with the institute as department chiefs or assistants.

The police, the courts, the insurance boards or whoever else demands or requests the aid of the medical examiners regularly or for a special problem send their records to the institute with the request for the desired examination or autopsy. The incoming cases are distributed by the director among his coworkers according to the type of the case and according to the official duties and interests of his assistants. Since the institutes are generally situated in the same building as the city mortuaries, the medicolegal autopsies can be performed without much waste of time.

In the majority of cases the patients who are examined come to the institute by special appointment. The only interruptions which are unavoidable are sudden calls of the homicide squad and, of greater importance, subpoenas from the courts. In the larger institutes, however, several assistants generally are present and able to substitute for one another.

Of course the above description of a rather extensive forensic institute with several assistants, technicians, dieners and clerical help is correct only for the larger cities on the Continent. The smaller universities in Germany, as well as in France, Italy and elsewhere, have to be content with a smaller staff and less room and equipment, but, on the whole, they are organized in a similar manner.

In districts where there is no university, there is usually one medical examiner on duty. For special investigations he has to rely upon the nearest forensic institute. In Germany, as well as in most European countries, the tendency exists to appoint one well-trained full time medical examiner for a large district which includes several rural counties. Such a system eliminates the prevailing situation that results, in smaller cities and rural counties, in the state public health officer having to engage in forensic tasks for which he is unqualified.

We now come to the third and last of my three questions which concerns the forensic training of the future medical examiners. I think it will be appropriate to outline the teaching of forensic medicine for the undergraduate students in the Continental universities.

So far as I know the first obligatory course was that adopted by the University of Vienna in 1803. Later on, the curricula for students of medicine generally required the attendance at, or perhaps more exactly the payment for, lectures in forensic medicine. In Germany a definite change from paying to attending took place when, in 1926, forensic medicine became one of the subjects which had to be passed as part of the state-board examination.

Usually two to three hours a week are devoted to forensic medicine during the four months of one term. The student is first told of the physician as an expert in the laws and regulations, including the exercise of professional discretion, and of the required forms of written or oral medical testimony and of certificates about disease, health and death. Then a short sketch is given about the technic of medicolegal autopsies, with practical demonstrations after the lectures for smaller groups of students. Identification and examination of the dead, signs of death and medicolegal relations of death are next. They are followed by a more detailed discussion of the different kinds of death by violence and of sudden death from natural causes. Matters involving the sexual functions, pregnancy, legitimacy, criminal abortion, birth and infanticide are also included. If there is time, some questions in toxicology or forensic psychiatry are discussed.

It may be pointed out that similar lectures, with emphasis on other points, are also given for law students. In Berlin, a course on forensic psychiatry with demonstrations of patients was given, and very well attended, for both students of medicine and of law. The patients included delinquents in sexual crimes, those who had to be declared incapable of managing their affairs, schizophrenic patients and the most common types of psychopaths. The joint presence of these law and medical students was especially valuable because both groups were shown the different ways of thinking about and judging a mentally ill person. In what form courses in forensic medicine are conducted depends chiefly upon local conditions. In Zürich it is even possible for small groups of students to drive to the scene of a crime, under the supervision of an assistant. In Vienna special stress is laid upon the writing of correct autopsy protocols. In Berlin and elsewhere the assistants lecture in special courses about toxicology, insurance medicine and criminologic laboratory methods.

Teaching is not limited to students of the university. In almost every country special courses are given for the police. The common experience in different countries in Europe, as well as in New York City, points to the importance of such courses for the police, because they promote cooperation of the law enforcing agencies and the institutes of forensic medicine. This fact cannot be overemphasized. Where forensic medicine has attained a high standard, it has been due to close cooperation with all the other branches of justice and is an essential part of them.

The postgraduate training of the future medical examiner does not begin in the forensic institutes. He has to acquire a practical knowledge of internal medicine, must work for one or several years in a pathological institute and have at least one year's psychiatric training before the director of an institute will be interested in appointing him as assistant. The

training, although of long duration, is economically possible because a good worker is often able to obtain a paid position from the beginning, after having finished his clinical internship.

In the institute itself the assistant does the routine work and starts research problems, in which he has had a special training or in which his superior is particularly interested. After some time, he begins teaching students according to his abilities. In Germany he has to pass the public health officer examination in order to become eligible for the position of medical examiner. This examination can be compared to the civil service examination in this country. Whether, after such training, a physician decides to stay in the university institute with an academic appointment or whether he prefers to go into a medical examiner's position outside the university, is merely a matter of personal choice.

I should like to add a few words about the position of the medical examiner as expert in the courts. Being a state official and being paid by the state, even though poorly, as is the rule, the medical examiner is strictly forbidden to practice medicine. Nor is he allowed to examine patients at the request of a private lawyer who would like the opinion of an official expert for nonofficial purposes. He must devote his whole time to his job, and, as a nonpolitical state official, he is financially practically independent. In the courts, whether summoned by the district attorney or the judge, he is the expert par excellence. Very often he is questioned and hard pressed by the lawyer of the defendant, but his position as impartial expert before the jury for the defendant and the district attorney gives him the protection of the court against unjustified attacks, which may be attempted from time to time.

The court has the right to subpoena experts other than the medical examiner assigned to the case. The latter often suggests the consultation of a specialist in difficult cases. Such a request is not derogatory to his position as impartial expert for questions of a medical nature.

I emphasize these facts because in my opinion they form some of several reasons why forensic medicine in Europe has had a good opportunity to develop and to attract able, well-trained physicians.

The development of medicolegal medicine in the Anglo-Saxon countries has been totally different from that described for the European continent. As outlined very instructively in Dr. Leary's paper[1] about the Massachusetts medicolegal system, the so-called coroner's system had come into existence in England in the early medieval ages. Later on it was adopted in the New England settlements. Speaking here in Massachusetts, the first state in this country to abolish the coroner's system in order to replace it, in 1877, by a modern medical examiner's system, it is perhaps worth while to outline briefly the principal differences between the two.

Ideally the medical examiner is selected from the civil service list. He should be a physician who is well trained in pathologic anatomy. In New York, for instance, he has to produce proof of having performed at least 150 autopsies. Appointments in Massachusetts are made by the Governor.

The duties and powers of the medical examiner vary somewhat in different localities. In Massachusetts, he must view the body of any person supposed to have come to death by violence and, if, in his opinion, further examination seems desirable, he must perform an autopsy, after due authorization, usually by the district attorney. The more recent charter of the City of New York, drafted in 1915 and put in effect on January 1, 1918, gives considerably greater independence and autonomy to the chief medical examiner and his associates than exist in Massachusetts. They have the right to hold hearings and to hear witnesses if they believe this to be essential for throwing light on a mysterious case. Of even greater importance is the regulation that the chief medical examiner and his coworkers have under their supervision not only the bodies of persons who have died suddenly from violent or natural death but those of all patients in hospitals who died within the first twenty-four hours after admission and those of all individuals who died at home without having been under the care of a physician. In all these cases the medical examiner alone decides whether an autopsy is to be performed. It is in his discretion to make out a death certificate with or without an autopsy, unhampered by any political pressure. The advantage of such independence is impressed upon everyone who formerly had to work under other conditions, where, even with the best cooperation of the district attorney, friction was at times unavoidable.

Unfortunately there are not many communities in this country like Massachusetts, some other New England states, New York City and Essex County, New Jersey, where a modern forensic system is found. Elsewhere in the United States the coroner's system predominates. Under the coroner's system a politically elected or appointed official, not always of the legal, much less of the medical, profession has to render decisions regarding the cause of frequently very complicated cases of sudden violent or natural death. It is at the discretion of the coroner and the coroner's jury when and by whom an autopsy should be performed. Being a politically appointed officer the coroner

is often guilty of selecting unqualified physicians for difficult postmortem examinations that require the skill and ability of a trained forensic specialist.

In some of the larger cities, the selection of the coroner's physician is limited to a list of well-trained pathologists, presented by the local medical association. But even this achievement was gained only after a long struggle on the part of the medical associations. The disadvantage of the above compromise is clear. The decision, whether a case is suspicious and whether an autopsy has to be performed, lies completely in the hands of not only inexperienced but not infrequently prejudiced laymen. It is not the scope of my lecture to comment further on this situation or to discuss what could and should be done about it. The leading crusaders against the existing conditions, such as Dr. Schultz, the late Dr. Norris and Drs. Gonzales, Vance and Gettler from New York, Dr. Martland from Newark and Drs. Magrath and Leary from Boston, have collected so many terrible examples of the misinterpretation of clear-cut facts by the coroners that it is superfluous to introduce more details.

The following facts are of main interest to us in comparing the Continental European with the American situation. Throughout the Continent we have had the steady, even if slow, development of a medicolegal system created by the needs of the law-enforcing agencies of the state and other governmental boards. The medical examiners themselves are state or city officials. In this capacity they are frequently connected with state universities and, if so, are able to use a high percentage of the material for teaching purposes.

In the United States, on the other hand, we have in only three relatively small areas, though they are important and influential, a system that is as effective as the European. The oldest American regulation has been in effect for fifty-nine years, the youngest for eight years. Although in Boston and in New York City the medical examiners are connected with the universities, this connection between practice on the one hand and research and teaching on the other is not so close as it is in Europe. One of the chief reasons for this, in my mind, is the fact that the American universities, as well as the English, are predominantly private institutions. This raises the question as to how far it is permissible to utilize official material in teaching in a private institution. Even in Boston and New York opinions of the public, of the undertakers and of the courts must be considered to a greater extent than is necessary abroad.

It is of importance in explaining the different development of forensic medicine in Europe and here to realize that American medical education has undergone many changes of organization in the last two decades. More urgent tasks had to be undertaken before an entirely new specialty could be added to the curricula of the medical schools. Moreover, this new specialty could not very easily be separated from other subjects such as pathology, bacteriology, serology, obstetrics and psychiatry. Furthermore, the interest in forensic medicine in the universities of this country appeared at a time when American medicine had definitely taken the lead from Europe. Experience had shown that only intensive specialization was the basis for the many scientific achievements for which humanity is indebted to American medicine. It may easily be seen from this that a specialty like forensic medicine, in the European sense, was looked upon with more or less justified distrust. Too many heterogeneous subjects were involved.

Catton,[2] in an outline for a university institute of forensic medicine, recommends the incorporation in the teaching staff of a professor of law, of psychiatry, of medicine, of pathology, of pharmacology, of surgery, of gynecology and of obstetrics, a superior court judge, the coroner of the county, the medical director of the industrial accident commission, some attorneys-at-law and some doctors of medicine, all as special lecturers in legal medicine. This plan demonstrates how far-reaching the specialization would be if all the subjects that are included in a European lecture course in forensic medicine, were to be taught in one forensic institute. Furthermore, Catton recommends not a specialist in forensic medicine—as the medical examiner or the coroner's physician—as director of such a hypothetical institute, but a psychiatrist or pathologist of the university.

I am a little afraid to state my own opinion about these problems because I have some doubt whether, as a foreigner who has been here two years only, I have the right to do so. Moreover, I am told that not infrequently the objection has arisen that it is inopportune and undesirable to import European ideas into this country. Whether that applies to medical subjects or whether the objection is restricted to the political and economic fields, I really do not know. In spite of these inhibitions I should like to say a few words about medicolegal practice in this country, particularly with reference to the situation in New York City, where, since September, 1934, I have had the opportunity to gain some practical experience being assigned to the office of the Chief Medical Examiner.

I do not believe that the present limitation of medicolegal medicine to the pathologic and toxicologic fields, as it is in New York, is sufficient to give an impetus for its further development in America. As long as every patholo-

gist thinks he can, if necessary, perform a difficult medicolegal autopsy without any special training other than the experience he has gained in routine pathology, he will not concede that forensic medicine exists as an important specialty in itself. It seems to me necessary that, in order to inspire a greater interest in forensic medicine in the medical profession and medical students, some of the other tasks mentioned in the first section of my paper should be included. For the time being the inclusion of psychiatry is out of the question, but even without it much could be done.

In order to develop the laboratory fields it is necessary to obtain the full cooperation of the law-enforcing agencies. Forensic medicine is no independent research subject. The problems of daily medicolegal practice are the elements from which to start. I think it should be possible to get more cooperation than now exists.

The police departments of many larger cities do not yet possess scientific laboratories of their own, and it is difficult to teach the detectives and inspectors where and when they can expect help from forensic medicine. As an illustration of practical difficulties let me mention that, despite the arrangements made in anticipation of material for blood group tests on dried blood stains in the many homicidal cases of New York City, we were able to get only three or four specimens for practical investigation in one and a half years.

I am mentioning these details because I want to refer to them again in the last part of this paper when speaking about the teaching of forensic medicine. Let me refer to another difficulty which, at least in New York City, happens often enough. A large number of autopsies in which insurance of one kind or another is involved are performed in the office of the chief medical examiner by him or his assistants. The experiences gained by the medical examiners through their special activities could be of great value for the insurance companies. But, while the European institutes for forensic medicine not only autopsy the cases but also work them up from every necessary angle for private as well as for public insurance, in New York the procedure is entirely different. The autopsy records are on file and accessible to the public. They often are interpreted in the courts by physicians who not only did not witness, but much less perform, the autopsy. These physicians are perhaps experts in other branches of medicine than those pertaining to the medicolegal field. In this way material that could be of great value for practical, scientific and teaching purposes is lost.

In the first part of this paper I mentioned the position of the European medical expert in the courts. Let me now refer briefly to the position of the American experts and its practical consequences for the development and teaching of forensic medicine. The judicature in the Anglo-Saxon countries is built on an entirely different system from that of most Continental European countries. We thus need not be surprised that the position of an expert here is totally different from that abroad. Much has been written in the American legal and medical literature about the duties, the rights, the behavior and the treatment of expert witnesses. I am sure that Spillman[3] gives too pessimistic a picture of the situation of the medical expert witness. It is a fact, however, that in this country the physician, whether he be a clinical specialist or a medical examiner, can give his opinion as an expert witness concerning the case pending in the court only by answering the questions of the lawyer or the district attorney. Sometimes, in the special form of answering hypothetical questions, he has an opportunity to explain his scientific opinion about a case in as much detail as he desires. But the written opinion which plays a dominant rôle in the work of his more fortunate European colleagues does not exist. There exists for the American medical expert no obligation to draw conclusions from his scientific work in the form of an exposé of the history of the case or of his actual findings during the examinations of the body or of the patient. Thus he lacks the highly important opportunity to give a reasoned account of his work in the forum of the court.

There is still another point of importance. In American law the expert witness acts as a witness for one party, which, in criminal law suits, is either the district attorney or the defendant. In civil suits the situation is very similar. The scientific conclusions of the expert are not supposed to be impartial, but to support the side which retains him. Of course, the medical examiner, who has performed an autopsy in a homicide case and appears in the court as an expert witness of the district attorney, will generally have no difficulties. Only a very audacious lawyer would doubt the examiner's impartiality in recording his findings. But, with a civil suit, the situation is entirely different, and here the advantages of the independence enjoyed abroad by the expert in forensic medicine become obvious.

I now come to the consideration of the teaching of forensic medicine in America as it exists today and as it should or could be. We have seen that the situation in this country is more complicated than in Europe. If the teaching of forensic medicine is to become more than a simple, colorless introduction into mere facts, then there must exist some form of close personal relation between one or several medical schools and the medical examiner's office. Even then only one of the essential conditions for a

useful course in forensic medicine will have been complied with. The practical material in the form of autopsies, laboratory problems and specimens ought to be available. Such conditions exist in Boston and in New York.

In New York one medical examiner lectures at the College of Physicians and Surgeons, Columbia University. Another gives a course of 11 hours for the fourth-year students of Cornell University Medical School. At the New York University Medical College the lectures are divided among the heads of the forensic department of the school, Dr. Martland, Dr. Gonzales, Acting Chief Medical Examiner of New York City, Dr. Gettler, Toxicologist of the Chief Medical Examiner's office and Dr. St. George, Assistant Director of Bellevue Hospital laboratories. The students of the last year are required to attend these lectures, aggregating 6 hours in all. Students and postgraduate students who are especially interested can voluntarily attend eleven more lectures where special problems, such as death due to shooting, to stabbing, or to natural courses and other subjects, are given in more detail. Only two students in 1935 and one in 1936 chose forensic medicine as elective work.

At present the tremendous autopsy material is used only very occasionally and not at all systematically for undergraduate teaching in medicolegal medicine. One lecturer in pathology at the Columbia University Division in Bellevue Hospital obtained permission through the courtesy of the chief medical examiner for the use of the material for demonstrations in his course of pathology. These third- and fourth-year students know at least enough of the necessary elements in pathologic anatomy to get something from these cases, but generally, the forensic viewpoint is of less importance to them and to their instructor than the purely pathologic findings.

Groups of second-year students from another medical college are, as a rule, not yet able to appreciate the importance of forensic facts, even if carefully demonstrated. We had planned for the first time this year to inaugurate a small elective course in forensic laboratory methods in the last of their second year for students who had finished their course in pathology. Although some interest was displayed, the project could not be realized because of an autopsy infection of the lecturer. It would, however, be preferable if the students had finished their third year before taking this course. It would also be better if they had previously attended lectures in forensic medicine.

The training of postgraduate students in legal medicine is a difficult problem. It has been tried in the New York University Medical College. Instruction has included lectures dealing with gross and microscopic medicolegal pathology, forensic laboratory methods and the more general aspects of medicolegal medicine. Occasionally there have been opportunities to do autopsies, to accompany the chief medical examiner on homicide calls or to go with assistant medical examiners to inspect suspicious cases of death. As a rule, these students are practicing physicians and are able to devote only a few hours in the morning to their studies. Furthermore, the majority have had little or no training in pathology and, consequently, the training that they received during the six months of instruction was somewhat inadequate.

Every member of a postgraduate course in medicolegal medicine should have had some training in pathology, at least equivalent to a six months' internship in a department of pathology in a large hospital. I personally believe that such students would get more out of the course if they had to write autopsy protocols regularly and if they had to do practical work using different methods which have been taught. It would also be of some value, if they were assigned to some special practical problem and had to refer to the literature. I am rather doubtful, whether the average practitioner, even if he attended a course of this sort for one full year, would gain enough experience to become a medical examiner. If former residents in pathology and coroners' physicians would attend these courses they would learn much more rapidly than the average practitioner and their training would be a very valuable addition to their knowledge of pathologic anatomy.

This leads to the question whether for the time being more should be tried or could be expected from a training in forensic medicine in the United States. The most reasonable answer is "no" for no paid positions in institutes similar to those in Europe are available. The incentive of a full-time, academic position is lacking. Under the present conditions the medical examiners and coroners' physicians, from sheer necessity, should be chosen from the pathologists. If they have had additional training, as recommended above, they obviously have all they need to fulfill the present obligations in the medicolegal field satisfactorily.

The situation could be changed only if the civil service examinations for the position of medical examiner were not to remain purely pathological. If they included questions actually related to practical forensic problems, the majority of candidates would think it advisable and necessary to acquire some experience in this field. The interest for medicolegal postgraduate instruction would probably become greater than it is at the present time. The European system with its special training of several years' duration in special institutes could be introduced step by step with the assistance of both

universities and public administration. If the medical examiner's system should gradually spread, the need for thorough training would at once become noticeable.

As to the undergraduate training in forensic medicine, I suggest broadening the field beyond what is given in the New York medical colleges. If the curriculum allows, I think it might be advisable to treat the following subjects: identification of the living and examination of the dead; medicolegal relations of death; signs of death; death from asphyxia; death by burning, sunstroke and electricity; death from cold and from starvation; wounds and mechanical injuries; matters involving the sexual functions, including sexual perversions; pregnancy and legitimacy; criminal abortion; birth and infanticide; medical examinations for insurance purposes; medical privileges and obligations; and evidence and procedure as regards the practicing physician.

To cover these subjects 25 to 35 hours would be necessary, without going into forensic toxicology or forensic psychiatry. Whether that will be possible, I do not know. But I am sure that the students would hear many things they should know, because later on they suddenly face questions of this kind in practice. I see in New York the same conditions I had an opportunity to observe in Berlin—many problems which are of medicolegal interest but which theoretically belong to other fields, such as obstetrics or psychiatry, are not reviewed because the clinician is usually interested in a different aspect. Furthermore, if a compensation case is demonstrated from a medicolegal point of view, it generally is presented quite differently from what would be apparent to the specialist in internal medicine. Whether different elective courses for small groups, such as courses concerning laboratory methods used in forensic medicine, insurance medicine or other topics, should be arranged, depends largely upon the interest of the students and upon the chief of the forensic department. I am sure that a more intimate acquaintance with medicolegal medicine will automatically be followed by an increasing interest in the methods and material, which, in turn, will lead to a gradual extension of instruction in this special branch and will help to overcome the obstacles and prejudices that still exist.

REFERENCES

1. Leary, T.: The Massachusetts medicolegal system with proposals and plans for a Boston Pathological Institute. Methods and problems of medical education. Ninth series. New York: The Rockefeller Foundation, p. 297, 1928.
2. Catton, Joseph: Institutes of legal and sociological medicine. Am. J. Surg. **26**:207 (Oct.) 1934.
3. Spillman, R.: Suggestions for improving medicolegal court procedure. Am. J. Surg. **26**:199 (Oct.) 1934.

MEDICAL HISTORY

SIR EDWARD CARSON AND THE CHAPMAN POISONING CASE*

BY WILLIAM PEARCE COUES, M.D.†

IN all the annals of related crime, no case is more celebrated than the one in which Sir Edward Carson successfully prosecuted the infamous poisoner, Chapman.

Marjoribanks tells us that since the trial of Oscar Wilde, Carson had very seldom visited the Old Bailey, "Where barristers sometimes find fame, but rarely fortune." His appointment as law officer, however, the author tells us, made it necessary for him to go there occasionally. It was, he states, a settled practice that in poisoning cases one of the law officers should appear.

"On the 16th of March, Carson led for the Crown in the indictment of one of the most loathsome and successful murderers in criminal history." He was, the author states, probably the best-known and most mysterious person in the annals of modern crime. The prisoner, he continues, called himself "George Chapman." He was finally indicted under the name of Severin Klosowsky, a Pole 36 years of age. He was charged with the wilful murder of a girl of 20 years, named Maud Eliza Marsh, who had been living with him as his wife.

Marjoribanks states that the leading counsel for the defence tried to have stricken off the record evidence as to the prisoner's past life, which he knew the Crown hoped to use, but the judge held that the Crown evidence was admissible. Carson for the Crown, he continues, was then allowed to testify, unrolling a terrible story concerning the defendant's previous life. He began, we are told, by saying that no murder could be more determined and malicious than poisoning. "Certainly," he said, "no murder can be more demonstrative of the cruelty of the person perpetrating it than that of a man standing by the bedside day after day of the person he professed to love, seeing her suffer torture and gradually sinking away from what he has, by his own hands, administered upon the pretense of treating that person for maladies with which he professed to be ac-

*From "Carson The Advocate," by Edward Marjoribanks, The Macmillan Company, New York, 1932.

†Coues, William Pearce—Formerly, Surgeon to Out-Patients, Massachusetts General Hospital. For record and address of author see "This Week's Issue," page 845.

quainted." Many witnesses from different parts of England, we are told, proved in detail by their testimony the frightful story which Carson revealed.

"On the twenty-second of October, 1902, a comely young woman known as Mrs. Chapman and the wife of the well-to-do publican in Union Street, Borough, died shortly before her twentieth birthday. She had for some time been tortured by severe abdominal pains which perplexed Dr. James Stoker, her medical attendant. But her husband had nursed her with the greatest care, had given her the choicest liquor in his cellar, and she had everything which sustained her during her illness from his own hands." We are further told that his customers knew that Chapman was something of a doctor, and he often was seen reading medical books in his shop. It was considered very strange that he opened the house the day after his "wife's" death.

The father of the girl, it appeared, insisted on calling in his family physician, Dr. Grapel. He suspected foul play and thought that the girl was dying of arsenical poisoning. At the girl's death, he insisted on an inquest. Antimony was found in every organ of the body.

Chapman was arrested. He appealed and, had his past life incidents not been discovered, he might have escaped, but papers were discovered that brought to light his strange history. His real name, Marjoribanks states, was Severin Klosowsky. He says that it was found he was born in Poland in 1865. Evidence gradually developed that a Brighton chemist had done business with him in Hastings. He read a report of the inquest in a newspaper and came to London and told the police what he knew. In April, 1897, he had sold an ounce of tartar emetic to a barber by the name of "Chapman", whom he knew well and whose customer he was. He had appeared to know a great deal about medicine and had been living with a buxom little fair-haired lady. Soon after this, the account continues, he left Hastings and purchased a public house in Bartholomew Square, off the City Road. After an agonizing illness there, Mrs. Chapman died, her body almost wasted away. The cause of the woman's death was attributed to phthisis. Next, we are told, he "married" his barmaid, Bessie Taylor, and moved to Bishop's Storford, where she died on February 13, 1901, after prolonged agony. Four doctors were called and all differed as to the diagnosis and the cause of her death, but Stoker, the same physician, who was called in to the case of Maud Eliza Marsh at a later date, gave a death certificate. These facts, the account continues, became known from knowledge obtained in the preliminary inquiries; the bodies were exhumed, antimony being found in each one. It was a curious fact that the bodies were almost perfectly preserved after long interments. "The face and hands were like those of a person who might have been coffined the day before." For years the bodies had lain preserved in their graves.

Delving and research on the part of the Crown prosecutor elicited the fact that the accused had been a student of surgery in Poland and had practiced in a Polish hospital. He had kept in his possession remarkable certificates as to his skill. After being in the Russian Army he came to England and practiced as a hairdresser's assistant in Whitechapel. We are told that he charmed his clients by his clever conversation and his knowledge of medicine. In 1888 he married a Polish girl named Lucy Baderski, and two years after that, the account states, he went to Jersey City, U. S. A. In 1892 he came back to England and lived in the same house with his own wife and a woman named Annie Chapman, whom he made his mistress and from whom he took his English name. We are told that these two women, fortunately for themselves, left him and so survived, the latter after a severe illness. Both, it was stated, gave evidence against him at the trial.

We are told that the defendant's lawyer did not put his client into the witness box. He pleaded not guilty and maintained his innocence to the last. He was found guilty after an eleven minutes' deliberation of the jury, and it was said that Mr. Justice Grantham condemned the prisoner to death under his Polish name without the customary adjuration, "May the Lord have mercy on your soul."

After the trial was over, it was found that the prisoner had married a woman in Poland and beheaded her there before coming to England. Mr. H. L. Adam, we are told, epitomized some very interesting evidence in his introduction to his edition of this trial to the effect that justice had at last caught an even greater criminal than George Chapman, *alias* Severin Klosowsky, appeared to be. When Detective-Inspector Godley arrested him, Marjoribanks says, he observed to his colleague, "You've got Jack the Ripper at last." Older American physicians will remember well the vivid accounts of this individual who terrorized Whitechapel and its neighborhood and committed the ghastly murders which were so graphically described in the English press of this time. Marjoribanks' account goes on to state that no man had ever been brought to justice for these crimes, but according to him the following remarkable consideration may suggest that the man whom Carson prosecuted to conviction in his only murder trial was none other than Jack the Ripper. First in this consideration, he continues, such mutilations as were found could not have been done by anybody without a knowledge of surgery. Moreover, all these crimes were done in the

year 1888-1889, and Chapman had come to England in 1888 and had remained there during this period. The Ripper murders were in Whitechapel and its immediate environs. Chapman, he states, was working at a barber shop in Whitechapel at that time. In 1890 Chapman went to New Jersey, U. S. A., and in the same year after his migration a number of murders of the Whitechapel type were committed in and about Jersey City. In 1892 they stopped. This was the time when Chapman returned to England. In addition, it is found that the description of the man who was "wanted for the Whitechapel murders" could also have been used with effect for the arrest of Chapman.

Can it be, asks Marjoribanks, that Chapman may have led two lives, neither of them virtuous, but both abominable ones of crime contrasting only in the method? It may have been, he goes on to state, that, while Chapman was living in comparative respectability with the first of the "'wives" whom he "married" so easily and before he met those whose lives he took with his corroding poisons, he was about in the streets at night with his surgeon's knife concealed under his coat, taking unholy pleasure in hunting down the poor unfortunates for mutilation and murder.

At all events, our author concludes, unlike George Smith, the Bathtub Murderer (who drowned his wives in the bathtub to get their insurance), Chapman's motive, as Carson said, was not gain but lust. He became tired of his victims, and when this happened neither medicine nor the law could help them. His success, we are told, made him arrogant, and if it had not been for this fact the "enemy of woman" might have continued indefinitely his career of crime. His confidence in his own success is less mysterious than the strange fascination which enabled him to capture, and apparently retain, the affections of women who delivered themselves into this Bluebeard's hands. Marjoribanks goes on to say that this remarkable power was also possessed by George Smith and that it may also be observed that each of them used with success exactly the same plan again and again "until arrogance made them careless and brought them to the gallows." He concludes with the following significant sentence, "The man, who calls in the same doctor to provide the death certificate for two women he has successfully poisoned with the same drug, is confident indeed."

THE PREVENTION OF CANCER*

Among the silent and sinister economic leeches which sap the blood of civilization, few do a more thorough and tenacious job than does cancer. All the material which the world needs for the greater prevention of cancer is *education* and the opportunity to obtain, at a low cost, the professional or medical help for which such education calls. Cancer is a disease that thrives on ignorance and must be fought with knowledge.

Fortunately cancer can be prevented. Some of the preventive measures are the following:

1. The observation of scrupulous *cleanliness* of the skin, the mouth cavity and the genital canal. This means the avoidance of infections or, if they occur, the obtaining of medical treatment to cure them.

2. *Moderation* in everything concerning the daily life and habits, especially in the use of tobacco; moderate and slow eating; avoidance of food and drinks that are either too hot or too cold or too irritating, such as alcohol in high concentration.

3. The *avoidance of chronic constipation* and of the consumption of irritating foods, not by using cathartics but by training the bowel to function regularly and by acquiring the habit to devote a daily, regular time to this function.

4. Keeping the body in *a perfect state of health* by regular hours of rest, sleep and exercise. One should sleep regularly eight hours and spend at least several hours daily in the open air with moderate exercise, such as walking, swimming, riding, golfing, tennis, bowling and so forth.

5. The *periodic examination;* that is, a yearly examination of men and women and the examination, in women, of the breasts and the genital system, especially after pregnancy and labor, and yearly after the thirty-fifth year of life. The preferable day would be one's birthday as this day is not easily forgotten and such an examination is a fine birthday present.

6. The immediate reporting to the family physician of any lump on the body, of any sore that does not heal within a week, or any discharge or bleeding from any of the body openings, as the nose, the mouth, the genital or urinary canals and the rectum.

The conscientious family physician will refer the patient to a specialist or clinic for an immediate correct diagnosis, after the examination, if he cannot make it. Many conditions (probably 95 per cent) will not be cancerous and those that are will be detected and offered the best guarantee of a permanent cure if immediately and adequately treated. Those that are not malignant can be treated without great discomfort and at slight expense and the chronic tissue changes are thereby removed.

*From *Clinical Medicine and Surgery*, December, 1935.

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

FOUNDED BY RICHARD C. CABOT, M.D.

TRACY B. MALLORY, M.D., *Editor*

CASE 22441

PRESENTATION OF CASE

A 47 year old Italian housewife was admitted complaining of pain in the right shoulder.

The patient had always been well except for occasional attacks of transient and migratory pain in several of the larger joints. Two months before entry she was awakened from sleep at night by a sharp stabbing pain in the right shoulder which radiated down the right side of the chest. The pain was aggravated by inspiration and movement and prevented her from sleeping for about four hours. It subsided but recurred on the following day and intermittently up to her entrance to the hospital. One month before admission she developed intermittent dull aching pain in the left chest, near the postaxillary line, which varied in intensity. At this time a nonproductive cough occurred about two or three times daily. Two weeks before entry she had an attack of dyspnea which persisted for twenty-four hours and during this she coughed up a small amount of blood-streaked sputum. Subsequently she became orthopneic and a week before admission a thoracentesis was performed. Two ounces of bloody fluid were removed and considerable relief was obtained. An x-ray taken at this time showed a high diaphragm with obliteration of the costophrenic angles by overlying soft tissue. No definite fluid was present. Both lower lung fields were hazy and there were fairly well-defined areas of homogeneous dulness in the medial portions. These were larger on the left side. Hilar shadows were slightly increased and the heart was transverse in position. On the night before entry she had another attack of dyspnea and coughed up several small blood clots and bloody sputum.

Fourteen years ago she had a cholecystectomy and appendectomy performed and nine years later a uterine tumor was removed.

Physical examination showed an acutely distressed, cyanotic, extremely obese woman sitting upright in bed. The skin was cold and clammy and there was profuse perspiration. Oral hygiene was poor and the mucous membranes were pallid. The trachea appeared to be slightly deviated to the left and examination of the chest showed slightly greater expansion on the left side. The right chest posteriorly and the lower axilla were dull to flat, and tactile fremitus was diminished. In this region distant bronchial breathing, pectoriloquy, and egophony were elicited. The right upper chest anteriorly was hyperresonant. Numerous coarse squeaky râles were audible generally and fine moist râles were heard at both bases posteriorly. The apex impulse of the heart was palpated in the sixth interspace at the anterior axillary line. The heart sounds were of poor quality and there was snapping reduplication of the first sound at the apex. P_2 was greater than A_2. The blood pressure was 130/70. The abdomen was obese, pendulous and showed three scars of previous operations, two of which contained incisional herniae. The liver extended a handbreadth beneath the costal margin and was quite tender. There was no edema.

The temperature was 98°, the pulse 120. The respirations were 30.

Examination of the urine was negative. The blood showed a red cell count of 4,300,000, with a hemoglobin of 70 per cent. The white cell count was 22,300, 87 per cent polymorphonuclears. A serum protein was 6 grams and the nonprotein nitrogen of the blood 13 milligrams. The vital capacity was 900 cubic centimeters and venous pressure 140 to 150 millimeters of water.

X-ray examination of the chest showed considerable change from the previous film. The entire right chest was homogeneously dense and obscured the outlines of the ribs in the lower portion. The mediastinum was only slightly displaced to the left. The dulness in the left chest was also increased but the upper third of the right lung was visible and appeared clear. The diaphragms were elevated.

On the day of entry an exploring needle was inserted for a distance of 6 centimeters into the seventh and eighth right interspaces 8 centimeters from the vertebral column. No fluid was obtained or resistance encountered. The patient was treated palliatively without any improvement in her general state. She became progressively weaker and died on the fourth hospital day.

NOTES ON THE HISTORY

DR. FREDERICK T. LORD: There are certain matters which might well have been amplified in the record, i.e., how long this Italian had been in this country and, in view of the possibility of echinococcus disease, if she had been exposed to dogs while herding sheep in Italy; as in all pulmonary problems we would like to know about wheezing and about clubbing of the fingers.

It is unfortunate that we do not know the nature of the uterine tumor, whether benign or malignant.

The temperature (looking at chart) was normal on the day of admission, but thereafter about 100° by mouth, the pulse about 140 and the respirations 25 to 30.

With respect to the problem as a whole, I assume that the "transient and migratory pain in several of the larger joints" has no bearing on the present situation. The story is that of a woman of 47 with an abrupt onset of pain in the shoulder and chest. The distribution of the pain and its aggravation during inspiration suggest pleural irritation while its recurrence throughout the course of the disease points to persistence of the pleural involvement. Further information is desirable, however, regarding the site of the pain in the right shoulder. Involvement of the trapezius ridge with associated hyperesthesia and hyperalgesia would suggest referred pain from irritation of the central portion of the diaphragm, but it is on the whole more likely that the pain was due to irritation of the parietal pleura.

The onset suggests a so-called "primary pleurisy" two months ago, but the later occurrence of cough, an attack of dyspnea with bloody sputum and the x-ray findings indicate that the lung is also involved. From the dates on the x-ray films, it is evident that the chest disturbance has progressed within about five weeks to such an extent that the entire right lung field has become homogeneously dense. Though the negative tap on the day of entrance is somewhat against pleural fluid, the x-ray and the physical findings are consistent with pleural fluid. Before attempting to make a diagnosis, it would be desirable to see the x-ray films and perhaps Dr. Holmes will demonstrate them.

X-ray Interpretation

Dr. George W. Holmes: We have two films, one taken in July and one in September. In this film the diaphragm is high on both sides. There must be something in the abdomen to push the diaphragm up rather than a process in the chest, because you woud have to have a well-marked collapse of the lung to cause such an elevation of the diaphragm, and the lungs do not appear to be collapsed. This shadow here to the left of the heart shadow is round with rather sharp borders, not at all unlike a metastatic nodule. I cannot be positive. This also looks like a mass extending out into the lung. Then the whole thing is obscured by the high position of the diaphragm. In September this same area was present and it does not seem to have increased a great deal in size, but we have some evidence now of fluid in the pleural space. The lateral views do not show anything except possibly this one which shows what appears to be a fluid level. Perhaps it was taken after the tap.

Differential Diagnosis

Dr. Lord: There are a number of conditions one should consider here. One ought to think of tuberculosis but there is very little to make this plausible. The progress is very rapid for a tuberculous process. We do not see tuberculous processes with these sharply limited lung shadows, and I should say that tuberculosis might be regarded as very unlikely.

I do not think we can quite so readily dismiss echinococcus disease but the areas of increased density are not typical of echinococcus cysts. The density is too soft and not evenly rounded enough for echinococcus cyst. The course is not that of echinococcus disease. We do not see echinococcus disease so rapidly progressing, so that I think we may dismiss that.

There are other conditions which ought to be mentioned which are the possibility of thrombophlebitis, embolism and infarction. The bloody fluid at the chest tap may be said to be consistent with pleural fluid neighboring a pulmonary infarct. In fact, bloody fluids of this sort are very common. But there is no obvious source of emboli here. We would expect bloody expectoration as an early symptom if she had as large areas of infarction as we see in the film. These lesions are too definite and sharply circumscribed to be typical of infarcts. There is with infarction commonly a discrepancy between the severity of the clinical disturbance and the paucity of x-ray evidence, and I think we may exclude infarction.

There remains as the most plausible explanation a malignant process. I am not certain just what the distribution of this malignant process might be. The liver is very much enlarged. There is no adequate explanation for this. There is no circulatory failure. So I think it is fair to assume that she had malignancy which is in the liver as well as the lung and the pleura. We are in a difficulty with respect to its distribution and if it is malignant disease, is it primary or secondary? Then here is this cloud upon the horizon of a uterine tumor that was removed five years ago the nature of which we do not know. It may have been malignant. I do not think I am justified in attempting to go farther and I would say that the most likely diagnosis is malignant disease and that we cannot decide between a primary and secondary growth or between carcinoma or lymphoblastoma; but, as Dr. Holmes has intimated, these circumscribed nodules, assuming they are in the lung fields, are more like secondary than they are like primary malignancy.

Dr. Donald S. King: I saw this patient once while she was on the ward. She had been

admitted as a case of cardiac decompensation. She was markedly orthopneic and was in the cardiac bed. Clinically she had pulmonary edema, ascites and edema of the extremities. The differential diagnosis lay between primary cardiac disease and pulmonary malignancy. Dr. Chester Jones who was in charge felt that the original x-ray film showed probably tumors, and I believe that he had made a definite diagnosis of malignancy with which I agreed.

Clinical Diagnoses

Carcinoma of the lung?
Metastases to the liver.
Hypertensive heart disease.

Dr. Frederick T. Lord's Diagnosis

Malignant disease of the lung, pleura and liver, ? secondary to malignant disease of the uterus.

Anatomic Diagnoses

Fibrosarcoma of the right lung with metastases.
Chronic cholecystitis.
Cholelithiasis.
Arteriosclerosis, generalized, aortic and coronary.
Operative scars: Cholecystostomy, appendectomy, and salpingo-oophorectomy.

Pathologic Discussion

Dr. Tracy B. Mallory: The anatomic findings are rather unusual. We found that the two lower lobes of the right lung were completely replaced by a mass of solid tumor. Incidentally, no pleural fluid was found on either side. The upper lobe on the right was well aerated and the middle and lower lobes completely missing, evidently replaced by this very solid, circumscribed, distinctly lobulated tumor. On section it showed a white, fibrous, slightly whorled surface without any trace of hemorrhage or necrosis. In the left lung we found a single area about 3 centimeters in diameter which was soft and appeared at first to be an abscess. The liver was very much enlarged, very pale yellow, obviously fatty, and showed on its diaphragmatic surface a single tumor nodule less than a centimeter in size. The enlargement of the liver evidently was due to the accumulation of fat, not to a metastatic process. We also found a metastasis in one kidney, and one in the spleen also, which is rather unusual.

Histologically the tumor is a fibrosarcoma of varying degrees of differentiation. The main tumor mass in the right lung, and also the one in the spleen, are made up of very well differentiated fibroblasts. In the necrotic mass in the left lung the tumor looks much more malignant and that is also true of the metastasis in the liver. In both of these there were a great many multinucleated tumor giant cells.

Dr. King: Is not this the first sarcoma we have had for a long time?

Dr. Mallory: It is the first primary sarcoma of the lung that I have seen, assuming of course that it is primary. The "uterus operation" was evidently an oophorectomy and salpingectomy. We have finally succeeded in checking that and find that a simple pseudomucinous cyst of the ovary was removed along with the corresponding tube which showed only slight salpingitis. The possibility of metastasis from a uterine or ovarian tumor is, therefore, ruled out. The possibility of metastases from some minute, undiscovered primary tumor in the skeletal system cannot be eliminated but seems extremely improbable.

Primary fibrosarcomas of the lung are among the rarest of tumors. In this hospital in over 8,000 autopsies we have never seen one before and have run across only one benign fibroma. Involvement of the lung by direct extension from sarcomas arising in the parietal pleura or in the mediastinum is of course less unusual.

Dr. Holmes: Was there any fluid in the abdomen?

Dr. Mallory: No.

CASE 22442

Presentation of Case

First Admission. A 66 year old native businessman entered complaining of left hemiparesis.

Except for occasional dizziness with exertion and periods of sleepiness the patient was well until seven weeks before entry. At this time he developed nausea and became unsteady upon his legs. Shortly afterward he vomited and had to be assisted to bed. He became quite drowsy but spent a restless night. On the following day he was unable to move his left arm and examination later showed paralysis of the entire left side of the body, including the face. The systolic blood pressure was 225. Subsequently a left homonymous hemianopsia became evident but there was no aphasia. Within a few days he was able to move his left leg and the blood pressure was 160/90. Four weeks before entry he became able to move the fingers of his left hand and gradually improved until he was able to walk without assistance. A mild confusion, evident at the onset, gradually disappeared and there remained only a residual weakness on the left side.

Physical examination showed a well-developed and well-nourished man in no acute discomfort. The retinae showed arteriovenous nicking. Vision was diminished in the left visual field bilaterally. The thyroid isthmus was

palpable but not markedly enlarged. The lungs were clear and the heart normal. The blood pressure was 194/96. The left hand and fingers were swollen and the interphalangeal joints appeared increased in size. There was coarse tremor of the fingers. The grip of the left hand was weak. The left wrist joint was slightly swollen, nontender, and there was no limitation of motion. The deep reflexes were normal but they were slightly more active on the left. The right abdominal reflex was more active than the left. There were no sensory abnormalities, but there was a positive left Babinski sign. The left homonymous hemianopsia persisted.

The temperature, pulse and respirations were normal.

Examination of the urine was negative. A concentration test showed a specific gravity of 1.020. The blood showed a red cell count of 4,820,000, with a hemoglobin of 75 per cent. The white cell count was 9,200, 68 per cent polymorphonuclears. The stools were negative. Hinton test was negative. A phenolsulphonephthalein test showed 95 per cent excretion of dye in two hours. The nonprotein nitrogen of the blood was 23 milligrams and a fasting blood sugar was 116 milligrams. An electrocardiogram showed normal rhythm with slight left axis deviation. T_1 and T_2 were upright and T_3 slightly inverted. Q-R-S_3 was bizarre. The chest lead was normal.

X-ray examination of the chest showed moderate left ventricular enlargement and there was extreme tortuosity of the aorta.

The patient's condition remained unchanged and he was discharged on the third day.

Final Admission, two months later.

Following his discharge the patient's hemiparesis continued to improve although the visual impairment was unchanged. The tendency toward sleepiness increased slightly but he led a rather vigorous life. About seven weeks before re-entry he had two profound weak spells, after a hot bath, each lasting about two minutes and occurring within a few minutes of each other. Thereafter there was gradual diminution of physical vitality and mental energy. He developed dull aching pain in the right side of the abdomen extending from the pubis to the costal margin. It occasionally radiated into the left chest and was aggravated by movement. The discomfort became progressively worse and there was concomitant loss of appetite. At the same time he became markedly depressed. A week previous to readmission his liver was found to be large and tender, and several days later he had a temperature of 100.4°. He developed a slight cough productive of a small amount of whitish material. Marked nausea and anorexia appeared but the bowel movements were regular. No abnormal stools were noted.

Physical examination showed the patient to be listless and depressed. There was a marked change since his previous entry and he appeared quite ill. An icteric tint of the skin with some pallor was noted and there was evident weight loss. The heart and lungs were normal. The blood pressure was 190/100. The abdomen was slightly distended and the liver extended 8 centimeters beneath the costal margin. The left arm was still weak and an equivocal left plantar response was elicited.

The temperature was 100°, the pulse 100. The respirations were 20.

Examination of the urine was negative. The blood showed a red cell count of 4,790,000, with a hemoglobin of 80 per cent. The white cell count was 16,700, 84 per cent polymorphonuclears. The stools showed some pallor but contained bile. Only the initial specimen gave a positive guaiac test; six others were negative. The nonprotein nitrogen of the blood was 29 milligrams and the serum protein was 5.7 grams. A van den Bergh gave a biphasic reaction and the qualitative test showed 5.1 milligrams of bilirubin. A blood cholesterol was 124 milligrams.

A plain film of the abdomen showed no abnormal gas shadows. The shadow of the liver was low, sharp, and thin. A Graham test was negative. A gastrointestinal series showed no abnormality of the esophagus or duodenum. The stomach was markedly displaced to the left. The right side of the diaphragm was elevated and showed limitation of motion. The shadow of the liver reached the crest of the ilium. A chest film showed evidence of some pleural reaction at the right base with pressure atelectasis but was otherwise negative.

The patient became progressively weaker and more jaundiced. The symptoms became aggravated, particularly the nausea and anorexia. His temperature fluctuated between 98° and 103° and the pulse between 80 and 120. He died on the fourteenth hospital day.

Differential Diagnosis

Dr. Wyman Richardson: There seems no doubt but that he had a cerebral accident of some sort and because of the rather slow onset one might postulate that it was a cerebral thrombosis. Hemorrhage or thrombosis, as a matter of fact, is a difficult differentiation to make and perhaps not of great value. When I have tried to make it I have usually been wrong.

I think a very interesting thing, and one that is not talked about very much, is the fact that people who carry a high blood pressure and have a cerebral accident usually get a very sharp drop in blood pressure and it may remain normal or at a much lower level than before for a long period of time, sometimes many years, which perhaps explains why a patient with a

hemiplegia may live such a long time without further accident.

He had a cerebral accident involving presumably the right capsule, of sufficient extent to catch some of the optic fibers.

One always looks at the ocular fields with the ophthalmoscope but I, personally, do not get much help in the diagnosis of arteriosclerosis. I can always see changes in the vessels and arteriovenous nicking when I feel sure there is arteriosclerosis present. When I do not feel sure, I do not think the ocular examination helps me very much, except in the presence of definite retinal changes such as hemorrhages and so on.

The abdominal reflexes are supposed to be absent in hemiplegia. The abdominal reflex on the side of the lesion was diminished, although that is not always true. I think that abdominal reflexes are difficult to interpret and oftentimes too much emphasis is placed on them.

The phenolsulphonephthalein test shows good function. As you probably know, we do the phenol red test on the medical wards on the time basis, the amount of dye excreted in the first fifteen and first thirty minutes being much more important than the amount of dye excreted in two hours.

A PHYSICIAN: What do you expect in the first thirty minutes for a normal function?

DR. RICHARDSON: Around 25 per cent.

DR. TRACY B. MALLORY: The fractional results were 25 per cent in the first 15 minutes, 0 in the next period, 30 per cent at one hour, and 20 per cent more at two hours. So that in the course of two hours there was 75 per cent total excretion.

DR. RICHARDSON: That is a very good function. Nothing at the end of thirty minutes, probably means he was unable to void when they tried to get the second specimen. They give a good deal of water in order to get the test at these two intervals. That is a good renal function.

Here we have a 66 year old man with a cerebral accident which I think was probably hemorrhage in spite of what I said in the first place. I believe it was hemorrhage in the region of the left internal capsule.

"About seven weeks before re-entry he had two profound weak spells after a hot bath. . . . " I believe weakness usually occurs in a hot bath, not after the patient gets out. What it means is that the effect of hot water in causing peripheral vasodilatation is enough to cause syncope and that is one of the grave dangers in regard to bathing. His weak spells came after the bath and may have been due to some slight difficulty with cerebral circulation such as many old people have.

"There was gradual diminution of physical vitality and mental energy." I am beginning to wonder again if he may have myxedema.

"He developed dull aching pain in the right side of the abdomen extending from the pubis to the costal margin." Here is something definitely different. We will leave the cerebral circulation for the moment and concentrate on this new symptom. He has something in his abdomen. He has a large liver, a cough and loss of appetite, with no evidence of gastrointestinal obstruction. The stools seem to be normal. There is no bleeding. I am going to hazard a guess that it represents some type of malignancy. It may have started in the lung and metastasized to the liver, or it may have started in the abdomen and metastasized to the liver. It might have started in the liver, but I do not see any evidence so far as that goes. The presenting symptom was dull aching pain in the right side of the abdomen.

There was an icteric tint to the skin. I think we may take it that there was also an icteric tint to the sclerae. That sounds as if someone were hedging.

"The liver extended eight centimeters beneath the costal margin." There is no note made in regard to the upper border of dulness, a point that should always be noticed in order to attempt to discover whether the liver is large or small.

This x-ray film shows the liver edge at the crest of the ilium. The diaphragm is up. It is round, perhaps a little more domed than usual and I should say a little high.

The white cell count is a little high. It is fair to say that you get an increase in the white cell count in malignant disease if there is infection or if there is involvement of the bone marrow and you can get it even without bone marrow involvement. You certainly see it quite consistently when there is widespread involvement of the bone.

I do not believe that the question of direct and indirect van den Bergh is of much help. The indirect is supposed to indicate a hematogenous type of jaundice and the direct the obstructive type. That is the interpretation which was originally suggested. I do not think it is true and I believe the reaction is more apt to vary with the intensity of the jaundice, the more intense the jaundice the more likely we are to get the direct reaction.

There is no evidence in this film of bronchiogenic carcinoma which as you know may well metastasize to the liver, so I am going to rule the lung out as the primary source of the tumor. The cough can be secondary to the elevation of the diaphragm, due to atelectasis of the right lower lobe, with perhaps some slight infection in it.

There is no localizing evidence to go on here

except the fact that he has a big liver, that he has jaundice and gets increasingly jaundiced.

It is conceivable that he has a lesion in the stomach. The gastrointestinal x-ray was negative and every time I try to beat the x-ray I am wrong. Cancers of the gallbladder usually arise in gallbladders that have contained stones for a long time. I do not see anything to say except that he has malignancy involving the liver and in this case he will have died from hepatic failure. Primary carcinomas of the liver are very rare. They usually occur on top of a previous cirrhosis or some process of long standing involving the biliary tract. Just for want of knowing where this should be put, I am going to put it in the liver because I do not see any other evidence. I will say he has primary carcinoma or hepatoma.

Clinical Diagnoses

Malignant disease of the liver, ? of origin.
Arteriosclerosis.

Dr. Wyman Richardson's Diagnoses

Malignancy of the liver (? primary in the liver).
Cerebral hemorrhage with old left hemiplegia.
Arteriosclerosis.

Anatomic Diagnoses

Carcinoma of the tail of the pancreas with metastases to the liver, and the retroperitoneal lymph nodes.
Ascites.
Pulmonary embolism.
Pulmonary infarct, septic, right lower lobe.
Pulmonary congestion, bilateral.
Pleuritis, acute fibrinous, right.
Jaundice.
Cerebral hemorrhage.
Arteriosclerosis, generalized, moderate cerebral, renal.
Peritonitis, chronic fibrous, focal.
Polyps of the cecum and the ascending colon.

Pathologic Discussion

Dr. Mallory: The chief thing we found at autopsy was malignancy. The liver was very large, weighing 3500 grams, and was studded with coarse nodules, which measured up to 4 centimeters in diameter. It seems surprising that they were never felt in a man who was quite thin, but the liver was always described as smooth. The source of the tumor, as is often the case in these very cryptic cases, was the tail of the pancreas. The head of the pancreas was perfectly negative. There was one other significant finding for which there is absolutely no lead in the clinical history. He evidently had a septic pulmonary embolus with a consequent septic infarct of the lung. It was well on the way to abscess formation at the time he died. It must have occurred after the x-ray picture was taken.

A Physician: Where was it?

Dr. Mallory: It was in the upper portion of the right lower lobe. That is an area that would not be obscured by the heart and I think you can say quite certainly it was not there. It was six centimeters in diameter and a septic infarct of that size could not be missed if it had been present.

The gallbladder was essentially negative, except for cholelithiasis. This man also had multiple polypi of the large bowel that were not picked up by x-ray and evidently had caused no symptoms. They were all benign in character.

When Dr. Cabot used to conduct these exercises he was always very emphatic in asserting that the percentage of correct diagnoses would be very much greater if you could tie all the clinical symptoms into one diagnosis than if you made two diagnoses. There was a considerable degree of truth in that and especially as applied to young individuals. But when you are dealing with individuals seventy years of age and over, it seems to me that that is a much less safe procedure. There often appears to be a tendency for everything to break down at once, like the proverbial one horse shay; and it is very common as the age goes up to find severe arteriosclerosis, one or two different kinds of tumor, pneumonia and perhaps other potentially fatal conditions in one individual. I have seen a man in the nineties die with five separate lethal diseases. I could not be sure which had killed him: tuberculosis, an infarct of the heart, a couple of cancers, or a cerebral accident.

Dr. Richardson: There is one point about this question of liver nodules that I would like to mention. It is a thing that often is overemphasized clinically and too much attention paid to it. You do find livers where you can very definitely feel hard nodules. Many times, however, nodules have been felt which were not there, or the converse, no nodules felt when they were there.

A Physician: With that in mind and without reference to anything else, if a film of that liver had been taken with a proper exposure for that one thing would it have brought out those nodules in the liver?

Dr. Mallory: It is conceivable, but I think by no means very likely.

The New England
Journal of Medicine

SUCCESSOR TO

THE BOSTON MEDICAL AND SURGICAL JOURNAL

Established in 1828

Published by THE MASSACHUSETTS MEDICAL SOCIETY under the jurisdiction of the

COMMITTEE ON PUBLICATIONS

R. I. LEE, M.D., *Chairman* R. M. SMITH, M.D.
R. B. OSGOOD, M.D. F. H. LAHEY, M.D.
J. P. O'HARE, M.D.

EDITORIAL STAFF

JOHN P. SUTHERLAND, M.D. JOHN F. FULTON, M.D.
GEORGE R. MINOT, M.D. STEPHEN RUSHMORE, M.D.
FRANK H. LAHEY, M.D. HANS ZINSSER, M.D.
SHIELDS WARREN, M.D. BENJAMIN WHITE, PH.D.
GEORGE L. TOBEY, JR., M.D. HENRY R. VIETS, M.D.
C. GUY LANE, M.D. ROBERT M. GREEN, M.D.
WILLIAM A. ROGERS, M.D. CHARLES C. LUND, M.D.
DWIGHT O'HARA, M.D. A. WARREN STEARNS, M.D.

ASSOCIATE EDITORS

ROBERT N. NYE, M.D. GEORGE G. SMITH, M.D.
JOSEPH GARLAND, M.D. WILLIAM B. BREED, M.D.

WALTER P. BOWERS, M.D., *Managing Editor*
CLARA D. DAVIES, *Assistant Editor*

THE NEW HAMPSHIRE MEDICAL SOCIETY

PUBLICATION COMMITTEE

CARLETON R. METCALF, M.D. HENRY H. AMSDEN, M.D.
WARREN H. BUTTERFIELD, M.D.

THE VERMONT STATE MEDICAL SOCIETY

PUBLICATION COMMITTEE

A. B. SOULE, JR., M.D. P. A. GODDARD, M.D.
H. E. UPTON, M.D.

SUBSCRIPTION TERMS: *$6.00 per year in advance, postage paid for the United States, Canada $7.04 per year, $8.52 per year for all foreign countries belonging to the Postal Union.*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the Journal office, 8 Fenway.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The New England Journal of Medicine, 8 Fenway, Boston, Mass.

APPROVING MEDICAL SCHOOLS

THE publishing of the qualifications for approved colleges, universities and medical schools, comes as welcome news that the Approving Authority created by the statute of 1936 has begun its work. To one who looks upon the regimentation of educational institutions as a means of securing progress, the requirements as published seem in a number of respects to be rather vague. But apparently the Approving Authority is seeking another way than by attempting to enforce complete uniformity. The emphasis is laid chiefly on the teacher: secure a competent teacher as the head of each department, give him such assistance as he needs in the way of persons, plant and equipment and he will build up his department. Perhaps this method shows a naïve faith in the teacher, but in fact if the teacher is not competent to build up his department, no one else can do it for him: the *only* hope is to secure a competent teacher. No amount of executive or administrative talent on the part of a president or a dean will take the place of competence in the teacher.

The formulation of the requirements indicates that Massachusetts is not to have unique, peculiarly exalted standards, but merely that what is expected of medical schools by other states will be expected here. It is perhaps worthy of note that three medical schools in Massachusetts have for years been meeting the standards generally accepted throughout the United States, and that the absence of standards set by Massachusetts has had no appreciable effect on the quality of their work.

The letter from Middlesex College to which reference was made recently in the *Journal* in the notes on the meeting of the Council, suggests that this institution is seriously beginning to set its house in order. Apparently it has had apprehensions as to the continuance of the censorious attitude which has characterized some members of the Society in the past. It has feared that its efforts toward securing adequate clinical opportunities might be in vain if the Society did not proffer assistance. It may be outside of the province of the Society formally to assist a medical school further if the Society already receives graduates of the school into its membership, but the reception of the letter by the Council should remove all doubts as to the attitude of the Society. "Nihil obstat." There is no possible objection to the activity of any members of the Society in attempting to assist the school or any other school in its efforts to meet the requirements for approval.

The new statute places the responsibility on the Approving Authority, and without its approval of a school no graduate of that school will be admitted to examination for registration as a physician. There is, by the statute, a period of probation, namely from the effective date of the act until January 1, 1939, and during this period of probation the schools have an opportunity for giving a demonstration as to whether they are capable of meeting the requirements for approval. During the period of probation all persons interested may put forth effort in improving medical education in the weaker schools without being regarded as advocates of low standards. Teachers and clinical material are available and can be secured if these schools will meet the conditions under which physicians and institutions are, in general, willing to cooperate.

If one judges merely by the number of persons in the United States who desire to study medicine, there is need for perhaps ten more medical schools. But it is important to emphasize the fact that the greater need is for improvement in medical education. There is no demand for an inferior grade of medical schools except by persons who place their own gain above the welfare of the patient. The powers

of the Approving Authority will enable Massachusetts to cooperate with the other states in eliminating low grade medical education. The alternatives for low grade schools now are that they must give a reasonably good medical education, or their graduates will not be permitted to take the examination for registration to practice medicine in Massachusetts.

It is reported that the new statute is regarded by some authorities as, within the limited scope of its provisions, one of the best in the United States. One of its peculiar provisions is the composition of the Approving Authority which consists of the Secretary of the Board of Registration in Medicine, the Commissioner of Public Health, and the Commissioner of Education. The field of its activity is primarily in the province of the Board of Registration in Medicine. The importance of Public Health is recognized by the inclusion of the Commissioner; and the inclusion of the Commissioner of Education recognizes the close relationship between preparation for practice and licensure. Perhaps this introduction of the Department of Education should be regarded as another step in the direction already taken by some states, and as an indication of the lines along which further progress is to be made in working out the difficult problem of just what persons should be licensed to practice medicine.

THE ARMY MEDICAL LIBRARY

With the receipt of the first volume of the fourth series of the *Index-Catalogue*, Surgeon General's Office, United States Army, known as the Army Medical Library, renewed interest is taken in this vast medical project. The *Index-Catalogue* has rightfully been called one of the greatest contributions that America has made to medicine. As a matter of fact, no library of comparative size, of any kind, is so well catalogued as our own Army Medical Library.

For many years this *Catalogue* was carried on with inadequate and often indeterminate monetary support. Part of it was started on some money left over from the Civil War hospital funds. From time to time additional support has been received from Congress. The venture, however, has always been on an unstable financial foundation. This, in itself, has resulted in a delay of three years in the publication of the new volume of the *Index-Catalogue*.

All will agree about the value of this work. It should, without any question, be continued. In order to see that this is done, Congress will be asked to appropriate annually an adequate sum of money, not only to see that the *Catalogue* is systematically printed, but to add to the current medical books and periodicals for the Army Medical Library. It is hoped that enough funds will be secured to allow a volume of the *Index-Catalogue* to be issued each year.

The Medical Library Association and other organizations are strongly behind this movement. It is hoped that all physicians who have an interest will aid by expressing their thoughts to the senators and congressmen from their districts.

The Army Medical Library is one hundred years old this year. The collection of books, which now has grown to nearly 400,000 volumes, began in the office of Surgeon General Joseph Lovell in 1836. Appropriate ceremonies to commemorate the anniversary are to be held in Washington on November 16. At the same time plans will be discussed, and perhaps even decided upon, for a new library building.

These two measures, the adequate financial support of the *Index-Catalogue* and the projection of a new Army Medical Library building are both of widespread interest to the medical profession and deserve our earnest support.

THE PERENNIAL PARADOX

Deaths exceeded births in France in 1935, according to *La Science et la Vie*, by nearly 20,000; 638,881 infants were born and 658,357 deaths occurred. In 1934 the births exceeded the deaths by about 43,000. Germany, on the other hand, showed an excess of 80,000 births over deaths during 1935. Meanwhile life grows longer, the expectation of life at birth in our own country having increased from 32.77 years in 1880 to 55.77 years in 1930.

Apparently, except under unusual economic circumstances and then only in certain countries, the dangers of race suicide are more apparent than real, and populations are on the increase. Increasing populations have always been a desideratum of the more clamorous politicians and even statesmen the world over, despite a real anxiety as to the wherewithal to feed, clothe and shelter this excess human baggage. Only in recent years has the world produced enough food for the human inhabitants of its surface, and even then the means of distribution lagged miserably behind the ability to produce. And still the political arbiters of the most densely populated countries have shouted out of one side of their mouths for more souls to save, and out of the other for increased territorial expansion with which to save them.

Other, and more thoughtful economists, in the midst of these dictatorial ululations, warn us that we are rapidly exhausting our natural resources; that our mineral stores are being depleted; our watersheds denuded; our water courses polluted; our wild life exterminated, which, in the case of our feathered denizens, means an appalling increase in insect life; and

our fertile lands, through soil erosion, being converted into possibly perpetual dust bowls.

It might seem wise, before congratulating ourselves too fervidly on increasing populations, to place quality before quantity, and plan whereby these populations could live more securely, comfortably and contentedly on the only sphere, so far as we know, which they are likely to inhabit. The present Spanish method of controlling superfluous population, while efficient, seems hardly designed to recommend itself to the superfluous individual.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

GOOD, FREDERICK L. M.D. Harvard University Medical School 1904. F.A.C.S. Professor of Obstetrics, Tufts College Medical School. Instructor in Gynecology, Harvard University Medical School. Surgeon-in-Chief, Gynecology and Obstetrics, Boston City Hospital and St. Elizabeth's Hospital. His subject is "Menorrhagia and Metrorrhagia of Benign Origin in Women Under Forty-Five Years of Age, with a Plea for More Conservative Treatment." Page 805. Address: 20 Commonwealth Avenue, Boston, Mass.

SCHUMANN, EDWARD A. A.B., M.D. University of Pennsylvania School of Medicine 1901. F.A.C.S. Professor of Obstetrics, University of Pennsylvania School of Medicine. Surgeon-in-Chief, Kensington Hospital for Women. Gynecologist and Obstetrician, Philadelphia General Hospital and Memorial Hospital. Obstetrician, Chestnut Hill Hospital. Consulting Obstetrician and Gynecologist, Frankford, Jewish, Rush, and Burlington County Hospitals. His subject is "Observations Upon the Hemorrhage of Pregnancy." Page 811. Address: 1814 Spruce Street, Philadelphia, Pennsylvania.

SHIPTON, GEORGE M. A.B., M.D. Johns Hopkins University School of Medicine 1917. Obstetrician, House of Mercy Hospital, Pittsfield, Mass. His subject is "Hospital Puerperal Sepsis." Page 817. Address: 74 North Street, Pittsfield, Mass.

LYNCH, G. W. A.B., M.D. Harvard University Medical School 1933. Junior Associate in Medicine, Peter Bent Brigham Hospital. Assistant Visiting Physician, Long Island Hospital. His subject is "Diabetic Deaths in Boston During 1935." Page 822. Address: 520 Commonwealth Avenue, Boston, Mass.

LANDÉ, KURT E. M.S., M.D. University of Berlin, Germany 1925. Formerly, Assistant Medical Examiner, State Institute for Forensic Medicine, Berlin University. Since September 1, 1934, Instructor in Forensic Medicine, New York University College of Medicine. His subject is "Forensic Medicine in Europe—Legal Medicine in America." Page 826. Address: 228 East 36th Street, Apt. 5D, New York City.

COUES, WILLIAM PEARCE. M.D. Harvard University Medical School 1894. F.A.C.S. Formerly, Surgeon to Out-Patients, Massachusetts General Hospital. His subject is "Sir Edward Carson and the Chapman Poisoning Case." Page 834. Address: 12 Monmouth Court, Brookline, Mass.

The Massachusetts Medical Society

FOURTH ANNUAL POSTGRADUATE MEDICAL EXTENSION COURSE

The following sessions have been arranged by the Committee for the week beginning November 2:

Barnstable

Sunday, November 8, at 4:00 p. m., at the Cape Cod Hospital, Hyannis. Subject: Heart Disease: Treatment of Cardiovascular Emergencies. Instructor: B. E. Hamilton. John I. B. Vail, Chairman.

Berkshire

Thursday, November 5, at 4:30 p. m., at the House of Mercy Hospital, Pittsfield. Subject: Cancer of the Cervix, Fundus and Ovary. Instructor: G. A. Leland, Jr. Melvin H. Walker, Jr., Chairman.

Bristol North

Thursday, November 5, at 4:00 p. m., at the Morton Hospital, Taunton. Subject: Acute Abdominal Emergencies. Instructor: E. L. Young, Jr. Arthur R. Crandell, Chairman.

Essex South

Tuesday, November 3, at 4:00 p. m., at the Salem Hospital, Salem. Subject: Blood Diseases: The Hemoglobin and Red Blood Cells in Relation to Disease. Instructor: W. P. Murphy. Walter G. Phippen, Chairman.

Franklin

Wednesday, November 4, at 8:00 p. m., at the Franklin County Public Hospital, Greenfield. Subject: Anesthesia: (a) Drugs in Anesthesia. (b) General Care of Patient in Anesthesia. Instructor: Joseph Tartakoff. Halbert G. Stetson, Chairman.

Hampden

Thursday, November 5, at 4:00 p. m., at the Academy of Medicine, Professional Building, 20 Maple Street, Springfield, and 8:30 p. m., in the Outpatient Department of the Skinner Clinic, Holyoke Hospital, Holyoke. Sub-

ject: Anesthesia: (a) Drugs in Anesthesia. (b) General Care of Patient in Anesthesia. Instructor: S. C. Wiggin. George L. Schadt and George D. Henderson, Chairmen.

Hampshire

Wednesday, November 4, at 4:15 p. m., in the Nurses' Home of the Cooley Dickinson Hospital, Northampton. Subject: Blood Diseases: The Hemoglobin and Red Blood Cells in Relation to Disease. Instructor: C. W. Heath. Robert B. Brigham, Chairman.

Middlesex East

Tuesday, November 3, at 4:00 p. m., at the Melrose Hospital, Melrose. Subject: Blood Diseases: The Hemoglobin and Red Blood Cells in Relation to Disease. Instructor: G. S. FitzHugh. Joseph H. Fay, Chairman.

Middlesex North

Friday, November 6, at 7:00 p. m., at St. Joseph's Hospital, Merrimack Street, Lowell. Subject: Acute Abdominal Emergencies. Instructor: A. W. Allen. Samuel A. Dibbins, Chairman.

Middlesex South

Tuesday, November 3, at 4:00 p. m., at the Cambridge Muncipal Hospital, Cambridge. Subject: The Prognosis of Heart Disease. Instructor: P. D. White. Edmund H. Robbins, Chairman.

Norfolk

Friday, November 6, at 8:30 p. m., at the Norwood Hospital, Norwood. Subject: *Complications* of Diabetes and Their Treatment. Coma; Insulin Reactions; Surgery (Gangrene, Carbuncle, etc.); Marriage and Pregnancy; Tuberculosis and Heart Disease. Instructor: Alexander Marble. Hugo B. C. Riemer, Chairman.

Worcester (Milford Section)

Thursday, November 5, at 8:30 p. m., in the Nurses' Home of the Milford Hospital, Milford. Subject: Suppurative Lung Disease, Lung Abscess and Bronchiectasis. Instructor: F. T. Lord. Joseph Ashkins, Chairman.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

Applicants for Examination by Censors

Dr. Nathan L. Jacobson, of Lynn, a graduate of Maryland Medical College, has been recommended by the following Fellows as an applicant for the Massachusetts Medical Society: Dr. Worthen of Lynn, Dr. Reingold of Lynn, Dr. Thomas Hennessey of Lynn, Dr. Harvey Newhall of Lynn, and Dr. James A. Dumas of Lynn.

R. E. Stone, M.D., *Secretary.*

MISCELLANY

HEALTH AND MEDICAL SCIENCE

Plans for a great health center and permanent public museum of health and hygiene for the New York World's Fair of 1939 were recently announced with the formation of an advisory group representing city and national health and medical organizations.

In making the announcement, Grover Whalen, President of the Fair Corporation, said that health and medical science will be ranked as one of the most important phases of the Fair. Plans for the necessary buildings and exhibits are yet to be worked out, but both the Oberlander Foundation and the Carnegie Corporation have already pledged financial aid. Other grants are expected to provide a fund for retaining the exhibits as a nucleus for the permanent museum.

The committee, of which Dr. Louis I. Dublin will be chairman, will undertake a five-fold project involving the establishment of a permanent museum of hygiene such as the famous German institution at Dresden.

The five major objectives as announced are as follows:

1. A complete coordinated health and medical exhibit, illustrating for public education the results of medical research, which would furnish during the Fair a nucleus for a large group of commercial exhibits of products related to health and afterwards the nucleus of a permanent institution.

2. A model health village constantly demonstrating equipment and methods in daily use by individuals, families and communities.

3. Emphasis at every appropriate point throughout the Fair of protective devices and services installed for the benefit of the visitors, which illustrate with commercial advantage the value of each device.

4. Provision for a permanent health center.

5. A strict censorship of medical products and other things sold or promoted on a health basis.

The health and medical exhibits will tell simply of the relation of the exhibits to the individual, with man himself as the central motif. In the exhibit, it is planned to have representations of the following:

"Models of the human embryo in its various stages of development.

"Formation of habits, nutrition and other problems of bodily and mental development in the early years of life, illustrated with common examples which the visitor may recognize from his own experience.

"Protective devices in school and playground, discovery and correction of defects, organization of the school for health and health teaching, posters, models, plays and programs prepared by the children themselves, would visually demonstrate the beginning of participation by the individual himself in his own health protection and promotion.

"Men and women in adult life, their hazards of occupation, personal hygiene, periodic examinations, accident prevention, responsibilities of parenthood, typical problems illustrated here with moving devices, and mechanical demonstrations will carry along the dramatic story of man's inward struggle to survive and prosper in his modern environment.

"A considerable section of the exhibit will be devoted to the early recognition of degenerative diseases, such as heart disease, cancer, nephritis, and diabetes. The fact that much may be done to prolong the lives of those who suffer from these diseases should alleviate the mental strain and stimulate sufferers to avail themselves of the skill of surgeons, the benefits of x-rays and radium, the relief accorded by insulin, and so forth.

"Dominating this section of man himself and visually summing up the health story of his life may be a life-size man, woman and child, all transparent (as was the transparent man at the Century of Progress) naturally posed and inwardly illuminated to furnish a brief lesson in gross anatomy and surrounded with working models of the heart, the lungs and other organs.

"Why do some people get sick and some stay well? The question of immunity affects all age groups. A special section of the exhibit may be set aside to deal with this little understood problem. What we know about immunity, how it may be acquired naturally and artificially, its possibilities and limitations. This story has never been told wholly and understandably to the public. Working models showing the reactions of toxin and antibodies as they are now understood will provide a sympathetic understanding for immunization and vaccination services."

Other subjects to be included are the following:

Air hygiene and ventilation
Nutrition and the food supply
Water purification and sewage disposal
Municipal cleansing
Noise—its cause, effect and prevention
Mental hygiene—what it is and how it serves
Epidemiology and the disease detective
Protein poisoning—the ragweed and its allies
The sagas of the Health Heroes of History
Quacks, Quackery, Nostrums, Fads and Fallacies
Superstitions—old and new—Relics of the Medicine Man.

DR. HAROLD A. CHAMBERLAIN ADDRESSES THE CAMBRIDGE MEDICAL IMPROVEMENT SOCIETY

Dr. Harold A. Chamberlain, Professor of Urology, Tufts College Medical School, read a paper October 22 before the Cambridge Medical Improvement Society at the Cambridge City Hospital. Subject: An Evaluation of the Methods Employed for the Relief of Prostatic Obstruction.

HEALTH OFFICERS' MONTHLY STATEMENT OF VENEREAL DISEASES REPORTED IN THE NEW ENGLAND STATES

AUGUST, 1936

This statement is issued monthly for the information of health officers in order to furnish current data as to the prevalence of venereal diseases. The following reports were received from State Health Officers. The figures are preliminary and subject to correction. It is hoped that this will stimulate more complete reporting of these diseases.

State	Syphilis		Gonorrhea	
	Cases Reported During Month	Monthly Case Rates per 10,000 Population	Cases Reported During Month	Monthly Case Rates per 10,000 Population
Connecticut	218	1.27	189	1.10
Maine	30	.36	44	.52
Massachusetts	462	1.06	562	1.28
New Hampshire	5	.10	34	.68
Rhode Island	128	1.88	89	1.31
Vermont	27	.72	38	1.01

Treasury Department—U. S. Public Health Service.

PHYSICIANS REGISTERED BY EXAMINATIONS HELD JULY 16, 1936

THE COMMONWEALTH OF MASSACHUSETTS
BOARD OF REGISTRATION IN MEDICINE

Paul T. Hayes, Ipswich.
Francis A. Burns, Norwood.
Antonio P. Milone, Boston.
Clarke Staples, Chestnut Hill.
Hyman Millen, Roxbury.
Ethan Allan Brown, Boston.
Edward E. Shibel, Lawrence.
William Berenson, Burlington, Vermont.
Walter Goldstein, Berlin, Germany.
Robert J. Williams, Boston.
Alexandra Adler, Boston.
Paul Haun, Worcester.
Nathaniel Showstack, Dorchester.
Paul T. Strong, Vineland, N. J.
John J. Pallotta, Revere.
Margaret R. Simpson, Boston.
Robert Ehrlich, Newton.
Joseph V. O'Brien, Dorchester.
Sydney Scheinman, Willimantic, Conn.
Norman Hobica, Allston.
Jacob Mezer, Roxbury.
Byron H. Porter, New York City.
Harrison G. Pope, West Roxbury.
Seymour J. White, Malden.
Francis M. Burke, Natick.
Edward Mozes, Malden.
Carrie E. Chapman, Tewksbury.
Jacob Smith, Medford.

Lawrence E. Putnam, Plymouth.
William J. Egan, Dorchester.
Samuel S. Keiner, Bronx, New York.
Margaret W. Barnes, Waltham.
Abraham S. Freedberg, Salem.
Lazarus Secunda, Pittsfield.
Angelo A. LoVetere, East Boston.
Perry C. Talkington, Taunton.
Robert S. Schwab, Boston.
Rex L. Ross, Jr., Boston.
Margaret E. Hatfield, Hartford, Conn.
Ernest J. Vogel, West Roxbury.
Paul Nathan, Brookline.
Charles A. Janeway, Boston.
Francis R. Sullivan, Dedham.
Harry B. Friedgood, Brookline.
Raphael A. Lussier, Woonsocket, Rhode Island.
Daniel N. Beers, Bridgeport, Conn.
Nelson Dodge King, Melrose.
Edward G. Huber, Waban.
Gerald G. Garcelon, Boston.
Ezra A. Jacobs, Brooklyn, New York.
Samuel B. Jones, Worcester.
William B. Wood, Jr., Baltimore, Md.
Olive S. Hayward, Hanover, N. H.
Nathaniel N. Bennett, Roxbury.
John A. Kenney, Somerville.
Edward M. Barron, Dorchester.
Robert A. Friberg, Winchester.
Frank J. Pellegrino, Castleton, Vermont.
John Hugh Tucci, Cambridge.
Arthur L. FitzGerald, Rockland.
Albert Davis, Dorchester.
Thomas E. Caulfield, Jr., Woburn.
Samuel Goldfarb, Liberty, New York.
Alfred A. Goglia, East Boston.
Henry W. Benjamin, Newton Highlands.
Herbert I. Harris, Brookline.
Francis J. Wenzler, Dorchester.
William E. MacDonald, East Boston.
Emil H. Lewis, East Boston.
Max Goldman, Boston.
John C. McGirr, Cambridge.
John O. Niles, Somerville.
Abraham Portman, Roxbury.
Leo A. Green, Dorchester.
Delilah Riemer, Chelsea.
Elvin V. Semrad, Abie, Nebraska.
Samuel L. Stern, Chicago, Illinois.
Stanley R. Dean, Taunton.
Joseph H. Lipton, Roxbury.
Robert P. Goodkind, Boston.
Spiros P. Sarris, Lowell.
Thomas J. Cavanaugh, Framingham.
Sylvia Ruby, Brookline.
William D. Barone, Medford.
Minerva C. Zehner, Detroit, Michigan.
Charles A. Currier, Andover.
Michael C. Nakashian, Medford.
Frank W. Musche, East Dedham.
Albert E. Rauh, Cincinnati, Ohio.
James V. Scola, Springfield.
Frank K. Duffy, Watertown.
Jack Meyers, Mattapan.
Alfred Weller, New Haven, Conn.
Arnold Mills, Dorchester.
William G. Fraser, Lynn.
David A. Young, Boston.
William E. Dawson, Brookline.
Joseph F. Merola, Burlington, Vermont.
Vincent A. Balkus, Danvers.
George E. Currier, Sandwich.
Ruth Kabrisky, New York City.

MAINE NEWS

The annual clinical meeting of the Maine Medical Association was held at Waterville, Thursday, October 15, and Friday, October 16, 1936, with headquarters at the Elmwood Hotel, and a very fine attendance from all parts of the state; more than 150 physicians registering. A meeting of the Council and the County Secretaries and of the Editorial Board of the *Journal* was also held during the session. The clinics at the Maine Central Sanatorium, the Thayer, Sisters and Elm City Hospitals were well attended. Entertainment was furnished for the visiting wives by Mrs. Edward H. Risley and Mrs. F. T. Hill, wife of the President of the Maine Medical Association this year.

The first evening was devoted to a panel discussion of poliomyelitis conducted by Drs. J. A. Kolmer, Philadelphia; Josephine B. Neal, New York; W. I. Aycock, Boston; John L. Morse, Boston, and Arthur Legg, Boston.

The second evening was occupied by a discussion of medical economics, participated in by the combined committees of the Maine Medical Association, the Maine Planning Board and the State Department of Health. The survey of conditions in the state has not been completed and will be reported in full at the annual meeting in June, 1937. Information for study by these committees is being sought from doctors, town authorities, public health and tuberculosis nurses, and private citizens. It is the feeling so far that the medical needs and conditions in other states are not necessarily the same type as the needs and conditions in Maine, and that a fact-finding survey for Maine is necessary before recommendations to fit Maine people and taxpayers can be made.

Certain outstanding facts have been revealed already. First: There are a few sections of Maine where, because of distance, medical care is available only at prohibitive prices. This condition seems to be at present capable of solution only by bringing the patient to the doctor rather than the doctor to the patient.

Secondly: Wherever medical service is available it is of a sufficiently high character to satisfy all emergency and routine care.

Thirdly: There is some lack of proper care from want of funds or from indifference on the part of the patient, but there has developed no evidence or

criticism that patients fail to obtain essential treatment because of poverty.

The committee believes that a solution of the problem can and will be found so that no one in Maine need suffer for lack of medical care, without adopting any radical changes.

NEWTON DOCTOR GIVEN NEW MEDICAL POST

Dr. John J. Poutas of Newton, Assistant Director of Communicable Diseases in the State Department of Public Health since 1934, has been appointed State Health Officer for the Connecticut River Valley District to succeed the late Dr. Harold E. Miner of Holyoke.

Dr. Poutas has been associated with the State Health Department since his graduation from Harvard Medical School in 1930, first as Epidemiologist in the Division of Tuberculosis. He then served a year as intern in the Newton Hospital and, after completing this appointment, returned to the Department as Epidemiologist in the Division of Communicable Diseases. In December 1934, he was promoted to the position of Assistant Director of the Division of Communicable Diseases, serving in that capacity until his recent appointment.

The new appointee is thirty-one years of age, married and has two children. He graduated from Waltham High School and Boston College.

DR. RUSSELL AWARDED THE SEDGWICK MEMORIAL MEDAL

Dr. Frederick F. Russell, Professor of Preventive Medicine in the Harvard Medical School and Professor of Epidemiology in the Harvard School of Public Health, has been awarded the Sedgwick Memorial Medal for distinguished service in public health, the American Public Health Association announced October 20, 1936.

This medal, awarded annually by a special committee of the association, was created in memory of the late William Thompson Sedgwick, professor in the Massachusetts Institute of Technology and one of the outstanding investigators and teachers in the field of public health.

Dr. Russell, who is the eighth recipient of the medal, is a graduate of Columbia University College of Physicians and Surgeons and of the University of Berlin where he did postgraduate work. He rendered distinguished service in the field of public health by demonstrating for the first time the efficacy of vaccine prevention of typhoid fever among the United States troops mobilized along the Mexican Border in 1911 and the subsequent years.

In 1920 Dr. Russell became director of the public health laboratory service of the International Health Board, Rockefeller Foundation, and later succeeded to the position of general director of the International Health Board, now the International Health Division of the foundation, from which he retired in 1935.—Abstracted from the *New York Times.*

TWO BOSTON DOCTORS AWARDED X-RAY MEDALS

The gold medal of the American Roentgen Ray Society for the outstanding exhibit of the annual meeting was recently awarded to Dr. Aubrey O. Hampton and Dr. J. Maurice Robinson of Boston, in Cleveland.

The exhibit was entitled "The Lipiodol Demonstration of Rupture of the Intervertebral Disc into the Spinal Canal with Special Reference to Unilateral Lumbar Lesions Accompanied by Low Back Pain with Sciatic Radiation" and illustrated a paper by the same title. It presented in detail the roentgen findings in fifty cases operated upon at the Massachusetts General Hospital for the relief of symptoms of spinal cord and nerve root compression caused by the protrusion of portions of the intervertebral disc into the spinal canal, a clinically interesting group of cases described by Mixter and Barr and Mixter and Ayer in *The New England Journal of Medicine*, August 2, 1934 and August 29, 1935, respectively.

The exhibit stressed a method of lipiodol examination which demonstrated a defect corresponding to the lesion in twenty-nine of the thirty cases operated upon in the last two and a half years, practically all of which were unilateral ruptures of the lumbar discs with the clinical picture of low back strain, sacro-iliac disease, sciatica or related condition. It illustrated the anatomic basis of the normal lipiodol picture and of the characteristic defects produced by these ruptures and the correlation of these to establish the identity of the individual nerve roots seen in the lipiodol pictures.

CHARLATANISM

Charlatanism is as old as mankind. If one were to go back to the time of the Greeks he would find descriptions of cults that are not very unlike some of those in vogue today. One of the characteristics of quackery, however, is that an individual fad does not last indefinitely. It comes into prominence, soon reaches a peak and then disappears. This also applies to various healing cults, no matter how honestly they may have been conceived.

In this connection it is interesting to read the following quotation from Palmer, the leader of chiropractic, which was printed in the September issue of *Colorado Medicine*. "Chiropractic is doomed. You have drifted so far from the basic principle of chiropractic that you have lost your identity and brought the basic science bill on your heads. Twenty-eight chiropractic schools have been closed . . . you cannot defeat the ends of science. The basic science bills are the buckshot which we deserve for trespassing. When chiropractors preach and practice and try to become physicians, then it is justifiable for the medical men to educate the chiropractor."—*Neighborhood Health, N. Y. City Department of Health.*

COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT WITH 1935 AND SEVEN YEAR AVERAGE

MONTH ENDING OCTOBER 10, 1936

Diseases	1936 Week ending Sept. 19	1936 Week ending Sept. 26	1936 Week ending Oct. 3	1936 Week ending Oct. 10	Average cases reported for week corresponding to Oct. 10 for past seven years	1935 Week ending Sept. 21	1935 Week ending Sept. 28	1935 Week ending Oct. 5	1935 Week ending Oct. 12
Amebiasis	—	1	—	1	—	—	—	—	—
Chickenpox	11	8	12	28	23	9	15	16	16
Conjunctivitis Infectious	—	—	—	—	—	1	—	1	—
Diphtheria	—	—	—	2	8	2	3	5	7
Dysentery Bacillary	6	—	1	5	—	18	20	3	2
Encephalitis Epidemic	—	1	—	—	—	—	—	—	—
German Measles	7	4	2	2	2	—	2	5	7
Influenza	2	—	2	—	6	—	3	1	2
Malaria	2	—	—	1	—	1	—	1	—
Measles	3	4	4	6	11	9	9	31	37
Meningococcus Meningitis	—	1	1	—	—	—	—	—	1
Mumps	18	20	11	47	14	2	7	16	11
Paratyphoid Fever	1	8	10	1	—	1	2	—	—
Pneumonia (Broncho)	8	7	14	8	13	7	11	3	8
Pneumonia (Lobar)	4	3	5	17	17	8	9	11	8
Poliomyelitis	—	3	—	1	9	32	33	22	18
Scarlet Fever	3	10	8	19	22	37	13	27	24
Streptococcus Sore Throat	1	2	2	2	1	1	1	—	1
Tetanus	1	—	—	—	—	—	—	1	—
Trichinosis	—	—	1	—	—	—	—	—	—
Tuberculosis (Pul.)	32	26	23	22	21	26	21	40	19
Tuberculosis (O. F.)	1	—	2	—	1	2	2	1	—
Typhoid Fever	4	1	2	1	4	6	5	2	1
Undulant Fever	2	3	6	1	—	1	1	1	1
Whooping Cough	60	51	36	55	31	36	33	26	16
Gonorrhea	34	23	35	29	30	35	28	59	24
Syphilis	74	17	63	41	40	55	39	70	39

Remarks: No cases of Asiatic cholera, glanders, plague or yellow fever during the past seven years.

WIND DOES NOT BURN, TESTS IN WIND TUNNEL SHOW

Wind alone does not burn the skin. Cases of windburn, so-called, are really cases of sunburn in which the wind has helped the sun along by making the skin more susceptible to the ultraviolet rays of the sun. Wind-tunnel experiments supporting this belief are reported by Dr. W. H. Crew of New York University and Dr. C. H. Whittle of Addenbrooke's Hospital, Cambridge, England (*Science*, October 2).

In one of the experiments, one of the investigators exposed his forearm to the blast of a 40-mile per hour wind in an experimental wind tunnel. The forearm was covered by automobile tire inner tubing except for a small area about one inch square where the rubber was cut away, leaving the bare skin exposed to the blast. No ultraviolet light was present to reach the bare skin.

"During the half-hour exposure to the blast the skin exhibited 'gooseflesh,'" the report states, "but at no subsequent time was there the slightest evidence of reddening or chapping of the exposed area of the skin."

Cases of wind having caused burning of the skin are due, in their opinion, to the wind's having made the skin more susceptible to the ultraviolet rays by changing the temperature and moisture of the skin and by suppressing perspiration. Perspiration, they found in other experiments, can provide some protection from the actinic rays of sunlight.—*Science News Letter*, October 17, 1936.

DOZEN YEARS ADDED TO AVERAGE LENGTH OF LIFE

Eleven years have been added to the average man's life and 12 years to the life of the average

woman, it is revealed by the life tables of the U. S. Bureau of the Census.

At the beginning of the present century, the average length of life in the United States was 48 years for white men. Now, these new figures give an average life length of 59 years. For women the average lifetime in 1900 was 51 years. Now it is nearly 63 years.

The added years of life are credited to "improved sanitation, higher standard of living, labor-saving inventions in the homes and the advances made in education and in the science and practice of medicine and surgery."—*Science News Letter*, October 10, 1936.

DIETARY "ACIDOSIS"

Food charlatans, who exploit unscientific systems of dietetics based upon the contention that some foods form excess acid or that various food elements are incompatible, were attacked by Dr. James A. Tobey, of New York, in an address delivered before the American Public Health Association at the recent annual meeting in New Orleans.

Dr. Tobey declared that there is no scientific evidence to indicate that any one food or any combination of foods can significantly alter the acid-base balance in a normal individual. He asserted that acidosis is a symptom in certain morbid conditions but the nature of the diet plays no appreciable part in its development.

"Faddists rampant in the realm of pseudo-science have seized upon the acid-base balance of the body as an apt subject for their sophistry," Dr. Tobey said. "As a consequence, much more is written and said on this topic than is known, and much that is so blandly asserted, especially for lay consumption, is distorted and incoherent.

"The acid-base balance is a condition in which the ratio of carbonic acid to bicarbonate in the blood is maintained in a definite state of equilibrium. Although alterations in the hydrogen ion concentration of the blood and body fluids may and do occur within certain limits, such changes are due to serious disturbances of metabolism or in the functioning of body organs, usually the result of severe morbid conditions.

"The effects of foods on this acid-base balance have been greatly exaggerated, for their influence in bringing about modifications in the chemical content of the blood is practically nil.

"All foods may, of course, be classified chemically as acid-forming, base-forming or potentially neutral. By calculating the equivalent in normal acid present in the form of chlorine, phosphorus, and sulphur and the normal alkali in terms of the calcium, magnesium, potassium, and sodium in particular foods, relative values of excess potential acid or base can be expressed.

"Such calculations reveal that foods of decided potential acidity include meats of all kinds, fish, shellfish, and eggs, while cereals and breadstuffs show a mild potential acidity. The base-forming foods include most of the fruits and vegetables, with milk and cream displaying a slight potential alkalinity. The citrus fruits contain organic acid radicles, but these are burned in the body so that the end products are potentially alkaline. Pure fats, sugars, starches, and other foods devoid of minerals are neutral in their reactions.

"In the ordinary mixed diet which is the customary fare of the individual who has not succumbed to the wiles of a food fakir, the acid and base-forming elements in the diet will be reasonably well balanced. According to some authorities, however, a slight preponderance of alkaline foods is desirable. The scientific basis for such a categorical recommendation seems, nevertheless, to be somewhat tenuous."

Dr. Tobey reported that recent investigations have shown that there is no significant difference in the acid-base picture of the blood of normal individuals when they are fed mixed diets containing excessively alkali-producing foodstuffs.

"The accumulation in the body of an excess of acid, or the loss from the body of alkali, occurs as a rule only in certain severe ailments in which there are disturbances of metabolic processes or organic derangements.

"True acidosis is a symptom rather than a disease. The word is, however, a favorite one with food charlatans, who prate of the dire results from certain food combinations. Acidosis is also a popular term with the more gullible of the laity, who invariably confuse this condition with gastric hyperacidity or 'acid stomach.'"

CORRESPONDENCE

GRANITE DUST CONTROL PROJECT AT QUINCY

The Commonwealth of Massachusetts
Department of Labor and Industries
Division of Occupational Hygiene
23 Joy Street, Boston

October 20, 1936.

Herewith is a copy of a circular letter relative to the Granite Dust Control Project at Quincy which is being sent to the granite manufacturers of the state.

MANFRED BOWDITCH, *Director*.

COPY OF LETTER

The Massachusetts Legislature in 1934 instructed the Department of Labor and Industries "to make reasonable rules, regulations and orders applicable to all persons engaged in said (granite) industry for . . . the prevention of industrial or occupational diseases therein."

Preparatory to the formulation of such rules, the department undertook, in the fall of 1934, to establish in Quincy with the aid of the U. S. Emergency Relief Administration, an experimental project wherein devices particularly suited to dust control in the small granite shed typical of the industry in

Massachusetts might be developed, installed and tested under actual working conditions. The work of the project, started in March of last year, has now been completed.

The rules and regulations shortly to be promulgated will require the granite employer to provide equipment which will adequately control the hazardous dust incident to granite cutting operations. The purpose of the project has been to secure and make available to the employer information as to the most economical and efficient means for such control. This information will be contained in the report of the project now in preparation for printing. In addition, the project will be open for inspection and demonstration of the equipment from 9 a. m. to 12 m. and 1 p. m. to 3 p. m. on the following dates: Thursday, October 22; Tuesday, October 27; Thursday, October 29; Thursday, November 5; Tuesday, November 10 and Thursday, November 12.

The enclosed outline indicates the equipment which may be seen at the project, located at the Bizzozero granite shed on Bates Avenue, Quincy, Mass. It is hoped that the granite employers of Massachusetts will avail themselves of this opportunity to see and compare the devices available for dust control soon to be required.

Very truly yours,

MANFRED BOWDITCH, *Director.*

MASSACHUSETTS DIVISION OF OCCUPATIONAL HYGIENE
THE GRANITE DUST CONTROL PROJECT

A Summary Outline

Project undertaken September, 1934. Work started March, 1935. Completed August, 1936.

Purpose: To determine effectiveness and cost of dust control apparatus applicable to smaller units of granite cutting industry.

Financed by ERA and WPA (labor), insurance companies, tuberculosis associations, granite cutters union and individuals (contingent expense).

Technical supervision by Division of Occupational Hygiene.

EQUIPMENT INSTALLED

Dust Collectors

- Ruemelin cloth tube collector—Loaned by Ruemelin Mfg. Co.
- Pangborn cloth screen collector — Loaned by Pangborn Corp.
- Dustube (cloth tube) collector—Loaned by Am. Foundry Equipment Co.
- Primary collector—Constructed at project.
- Flat bag collector—Constructed at project.
- Round tube collector — Constructed at project (parts furnished by Harvard School of Public Health).
- Furnace cleaning outfit — Loaned by Spencer Turbine Co.
- Rotoclone—Loaned by Am. Air Filter Co.

Banker Exhaust Equipment

- Ruemelin banker exhaust—Loaned by Ruemelin Mfg. Co.
- Pangborn banker exhaust—Loaned by Pangborn Corp.
- Swing-pipe banker exhaust—Constructed at project (after plans by C. F. Berg Co.).
- Tool-attached exhaust—Constructed at project.
- Suction brush—Constructed at project.
- Flanges, baffle boards, curtains—Constructed at project.

Surfacer Exhaust Equipment

- Swing-pipe surfacer exhaust — Constructed at project.

Other Equipment

- Turntable—Constructed at project.
- Dust cart—Loaned by Lansing Co.
- Dust can—Constructed at project.
- No. 4 Monogram exhauster — Loaned by B. F. Sturtevant Co.
- No. 22CD exhauster—Loaned by Pangborn Corp.
- Motor, 1 H.P.—Loaned by Pangborn Corp.
- Motor, 5 H.P.—Loaned by General Electric Co.

OTHER DEVELOPMENTS

Calcium chloride as means of laying floor dust.
Inter-shed dust collection and disposal.

October, 1936.

OFFICIAL ACTIONS OF THE BOARD OF REGISTRATION IN MEDICINE

State House, Boston

October 22, 1936.

Editor, *New England Journal of Medicine,*

At the meeting of the Board of Registration in Medicine held October 8, 1936, it was voted to suspend for three months (from October 8, 1936) the license of Dr. Julius Saipe, 218 Highland Avenue, Somerville, Massachusetts, for deceit in connection with an accident insurance case.

Yours very truly,

STEPHEN RUSHMORE, M.D., *Secretary.*

M. de CHIRAC AND THE MISSISSIPPI BUBBLE

Editor, *New England Journal of Medicine,*

The following quotation is from "Extraordinary Popular Delusions and the Madness of Crowds," by Charles Mackay, LL.D., published by L. C. Page and Company, Boston, 1932:

> "M. de Chirac, a celebrated physician, had bought stock at an unlucky period, and was very anxious to sell out. Stock, however, continued to fall for two or three days, much to his alarm. His mind was filled with the subject, when he was suddenly called upon to attend a lady who imagined herself unwell. He arrived, was shown upstairs, and felt the lady's pulse. 'It falls! It falls! Good God, it falls continually,' said he musingly, while the lady looked up in his face, all anxiety for his opinion. 'Oh, M. de Chirac,' she said, starting to her feet and ringing the bell for

assistance, 'I am dying! I am dying! It falls! It falls! It falls!' 'What falls?' enquired the doctor in amazement. 'My pulse, my pulse!' said the lady. 'I must be dying.' 'Calm your apprehensions, dear madam,' said M. de Chirac, 'I was speaking of the stocks. The truth is, I hardly know what I have been saying.' "

Yours truly,

WM. PEARCE COUES, M.D.

October 22, 1936.

RECENT DEATHS

ANTHONY—GEORGE CHENERY ANTHONY, M.D., of Denton Road, Wellesley, died at his home, October 22, 1936. Dr. Anthony was born in Central Falls, R. I., in 1878, received his premedical education at Brown University and graduated in medicine from the Boston University School of Medicine in 1904.

Dr. Anthony was a Fellow of the Massachusetts Medical Society and the American Medical Association and was staff member of the Newton Hospital, the Waltham Hospital, the Leonard Morse Hospital of Natick and the Union Hospital in Framingham.

His specialty was Roentgenology. He was a member of the New England Roentgen Ray Society, the Harvard Musical Club, the Wellesley Lodge of Masons and the Kiwanis Club.

His military service was as lieutenant colonel in the 94th Division Medical Reserves, Camp Greenleaf, Georgia, and at the general hospital in Raleigh, N. C., with the rank of captain.

Dr. Anthony is survived by his widow, Mrs. Helen C. Anthony; a daughter, Miss Jean Boss Anthony; a son, Joseph H. Anthony, of Brookline; two sisters, Mrs. Charles C. Hamilton, of Wellesley, and Mrs. Clarence G. Remington, of Providence, and a brother, Frank J. Anthony, of Providence.

CHANDLER—HENRY BECKLES CHANDLER, M.D., C.M., died October 7, 1936, at Arcadia, California. Dr. Chandler was born in Barbados, West Indies, June 24, 1855, the son of Cumberbatch and Catherine E. (Gall) Chandler. His family left Barbados and went to Montreal when he was ten years old. He received his early education from tutors and then went to the University of Bishop College Faculty of Medicine, working his way through because of the death of his father. Dr. Chandler graduated with honors in 1880.

From 1880 to 1882, he was House Surgeon at St. Peter's Hospital, Brooklyn, New York. From 1882 to 1883, he was Surgeon at St. Elizabeth's Hospital, Boston. In 1883, he became House Officer at the Massachusetts Eye and Ear Infirmary, where he remained until 1912 as a member of the Staff retiring to become Consulting Surgeon until his death. In 1902, he became Professor of Ophthalmology at Tufts College Medical School and held that position for nearly ten years.

Dr. Chandler was a Fellow of the American Medical Association, the Massachusetts Medical Society, a member of the American Ophthalmological Association, and the New England Ophthalmological Association.

His contributions included articles to the different ophthalmic journals. He was a collaborator of the System of Ophthalmology and the American Encyclopaedia of Ophthalmology.

Dr. Chandler was credited with the first "button hole" operation which took the place of iridectomy in cataract operations leaving the pupil in its natural shape without the danger of a prolapsed iris. He did many of these operations with marked success.

His private practice was large and covered a period of forty-eight years in Boston. Being kind, jovial, and charitable, he made a host of friends among his patients, and from their contact derived most of his pleasure in the later years.

Dr. Chandler married Hattie L. Rigby in 1885. They had four children, Harold B. Chandler, M.D.; Mrs. George S. Fuller, of West Newton, Massachusetts, and Charles H. and F. Phillip S. Chandler, of California. Mrs. Chandler died thirteen years after their marriage. Dr. Chandler practically gave up social life, following her death, and spent most of his leisure in reading.

Until a few years before he retired, at the age of seventy-five, he enjoyed excellent health. As a younger man, he particularly enjoyed fishing.

After retiring, he went to California to live, but returned to spend his summers in Boston.

Three brothers, his four children and seven grandchildren survive him.

CROSS—WILLIAM P. CROSS, M.D., of 491 East Broadway, South Boston, died October 21, 1936. He was born in South Boston in 1873 and graduated from the Harvard Medical School in 1896. His internship was served at the Carney Hospital.

Dr. Cross was a member of the South Boston Medical Society, a Fellow of the Massachusetts Medical Society and the American Medical Association, and a member of the Pere Marquette Council and Knights of Columbus.

Dr. Cross, who was unmarried, is survived by a sister, Miss Catherine F. Cross.

OBITUARY

DR. EDWARD DANIEL HURLEY

Dr. Edward Daniel Hurley, Surgeon-in-Chief of the Ophthalmological Service at the Carney Hospital, died June 8, 1936. He was born in South Boston in 1881; graduated from the Boston Latin School in 1900, and from the Harvard Medical School in 1904. He then trained for his specialty in the Carney Hospital, Massachusetts Eye and Ear Infirmary and in Vienna. He was a Fellow of the American College of Surgeons, a member of the Academy of Ophthalmology and Oto-Laryngology and was President of the Governing Board of Carney Hospital for many years.

Dr. Hurley was a former President of the South Boston Medical Society, Captain of the Old Ninth

Regiment Medical Corps and a member of the South Boston Citizen's Association. He was affiliated with the Knights of Columbus and the Belmont Country Club.

He is survived by his widow, Isabel, and four children, Edward D. Jr., Paul, Vincent and Dorothy.

We, his former associates at the Carney Hospital, deeply mourn his loss and feel that a valiant and true friend has passed on. Wise, kind and just in his counsels, he was ever ready to bear or lighten the burdens of another. He gave freely of his great skill to ease the pain and affliction of his fellow man. He was a true physician, and to be his friend was to know the full meaning of friendship; a clasp of his hand, his smile and gentle voice meant loyalty in all things dear to true friendship.

We men of Carney shall badly miss our physician, friend and counselor.

"So long you wandered on the dusty plain,
Where flit the shadows in their endless cry,
You reach the shore where all the world goes by,
And leave the strife, the slavery, the pain."

NOTICES

MEDICAL CLINIC AT THE PETER BENT BRIGHAM HOSPITAL

At 3:30 p. m. on Thursday, November 5, in the Amphitheater of the Peter Bent Brigham Hospital, Dr. James H. Means, Jackson Professor of Clinical Medicine, Harvard Medical School and Chief of Medical Services, Massachusetts General Hospital, will give a medical clinic. To it are cordially invited practitioners and medical students.

HOME OWNERS—WATCH OUT!

Watch Out for This Racket!—Smooth, high-pressure salesmen urge you to have repairs—shingling, painting, and so forth — made on your house upon representations that your house would be used as a display job for advertising purposes; and that you would be well paid for permitting its use for display and a commission on other jobs secured as a result.

Complaints indicate that these representations have been used as a fraudulent method of inducing home owners to sign contracts and promissory notes for repairs. The notes are immediately sold to third parties who proceed to collect—but the display job idea is the "bunk". You don't collect any commissions or anything else but a lot of debts.—*Boston Better Business Bureau.*

ANNOUNCEMENT

MYER BRODY, M.D., announces the opening of his office at 1478 Highland Avenue, Needham, Massachusetts.

REMOVAL

AUSTIN W. CHEEVER, M.D., announces the removal of his office from 41 Bay State Road, Boston to 464 Beacon Street, Boston. Telephone, Kenmore 9145.

BOSTON DISPENSARY

25 Bennet Street, Boston

MEDICAL CONFERENCE PROGRAM

Lecture Room, Second Floor
9-10 a. m., November, 1936

Tuesday, November 3—Diseases and Injuries to the Hip Joint. Dr. John D. Adams.

Wednesday, November 4 — Hospital Case Presentation. Dr. S. J. Thannhauser.

Thursday, November 5—Blood Clinic. Dr. Isidore Olef, Dr. H. G. Brugsch.

Friday, November 6—Protamine Insulin. Dr. Elliott P. Joslin.

Saturday, November 7—Hospital Case Presentation. Dr. S. J. Thannhauser.

Tuesday, November 10—Some of the Newer Aspects of Cancer. Dr. William Shedden.

Wednesday, November 11—Holiday.

Thursday, November 12—Chest Clinic. Dr. John W. Strieder, Dr. Heinz Magendantz.

Friday, November 13—The Prevention, Control and Treatment of Tuberculosis. Dr. Frederick T. Lord.

Saturday, November 14—Hospital Case Presentation. Dr. S. J. Thannhauser.

Tuesday, November 17—Prognosis in Tuberculosis. Dr. Samuel J. King.

Wednesday, November 18—Hospital Case Presentation. Dr. S. J. Thannhauser.

Thursday, November 19—Social Service Case Presentation. Miss E. C. Canterbury.

Friday, November 20—Psychopathology and Society. Prof. Elton Mayo.

Saturday, November 21—Hospital Case Presentation. Dr. S. J. Thannhauser.

Tuesday, November 24—X-ray Demonstration. Dr. Alice Ettinger.

Wednesday, November 25—Hospital Case Presentation. Dr. S. J. Thannhauser.

Friday, November 27—Subject to be announced. Dr. Robert B. Greenough.

Saturday, November 28—Hospital Case Presentation. Dr. S. J. Thannhauser.

REPORTS AND NOTICES OF MEETINGS

BOSTON SOCIETY FOR THE ADVANCEMENT OF GASTROENTEROLOGY

At the Harvard Club on Thursday, September 24, 1936, the Boston Society for the Advancement of Gastroenterology was organized. This Society is affiliated with the National Society for the Advancement of Gastroenterology, of which organization it represents a local chapter. The affiliation affords the Boston Society the advantages accruing from close association with a large national organization possessing important international connections. The affairs of the Boston Society are administered by an executive committee, consisting of two elected members and the officers *ex-officiis*. The officers elected for

the following year are as follows: President, Dr. Charles W. McClure; Vice President, Dr. William R. Morrison; Secretary-Treasurer, Dr. Lester R. Whitaker. The elected members of the Executive Committee are Dr. Henry Baker and Dr. Louis F. Curran.

The objects of the Boston Society are formally portrayed in its constitution as follows:

a. This Society is organized for the purpose of advancing the practice and study of diseases of the digestive tract and the accessory organs of digestion, including those of nutrition.

b. To stimulate and encourage research work in every phase of Gastroenterology.

c. To unite in one organization those duly licensed physicians who are interested in Gastroenterology and the allied subjects in this field of work.

d. To promote the practical application of all recent advances in the field of Gastroenterology and to help correlate the clinical and experimental work.

e. To conduct instruction in Gastroenterology and allied subjects and to act as an educational body. To conduct meetings in gastroenterological subjects in connection with other medical organizations or independent of them.

f. To formulate the highest standards and principles for the practice of Gatroenterology.

g. To encourage legislation and public support as related to Gastroenterology.

h. To affiliate the membership with the National Society for the Advancement of Gastroenterology in constituent membership in that organization. Such affiliation gives to the Boston Society for the Advancement of Gastroenterology rights for publication in the official journal of the National Society, *The Review of Gastroenterology;* also on the payment of the dues of affiliation a subscription to all the issues of this journal and publications, and full rights and privileges of membership in the National Society for the Advancement of Gastroenterology.

Two of the main purposes of the Boston Society are to stimulate interest (1) in the relation of gastroenterology to the practice of general medicine and the various specialties; and (2) conversely, in the relation of the latter fields of medicine to gastroenterology. These objectives are such that the Society's membership will be composed largely of physicians and surgeons whose primary interests are outside the specialty of gastroenterology. Thus the Society welcomes applications for membership from all members of the Massachusetts Medical Society in good standing. The annual dues are five dollars.

Meetings will be held from October to May, which notices the Society plans to submit to the *Journal* for publication.

NEW ENGLAND SOCIETY OF PSYCHIATRY

The annual Fall Meeting of the New England Society of Psychiatry was held at the Brattleboro Retreat, Vermont, on October 8, 1936. One hundred and eighty psychiatrists of New England were present. The hours preceding the dinner were given over to the inspection of the hospital and many favorable comments were heard on the type of construction and equipment of the various buildings. At one o'clock an excellent dinner was served.

Dr. Winfred Overholser, President of the Society, conducted a short business meeting during which the following physicians were elected members of the Society: Wilfred Bloomberg, M.D., Boston, Mass.; Melvin Goodman, M.D., Hathorne, Mass.; Lois E. Taylor, M.D., Hathorne, Mass., and W. K. Skinner, M.D., Brattleboro, Vermont. Eleven names were proposed to be acted on at the next meeting. He then called upon Judge Harrie B. Chase, Chairman of the Board of Trustees of the Retreat, who welcomed the members, his address being in a particularly happy vein.

The President then called upon Dr. Horace G. Ripley, superintendent of the institution, who gave a history of the hospital and definition of its purpose. Following this, Dr. Overholser called on Dr. Gregory Zilboorg of New York City, who spoke on "The Border Lines of Knowledge in Present-Day Psychiatry." This was a most interesting and instructive talk, which it is hoped will be published. Dr. Zilboorg made many references to Dr. Oliver Wendell Holmes and, at the conclusion, Dr. L. Vernon Briggs of Boston gave a vote of thanks and referred briefly to the fact that he was probably the only physician present who attended lectures by Dr. Holmes.

HARLAN L. PAINE, M.D., *Secretary.*

GREATER BOSTON MEDICAL SOCIETY

There will be a meeting of the Greater Boston Medical Society on Tuesday, November 10, at the Beth Israel Hospital Auditorium, Boston.

PROGRAM

Effects of Protamine-Zinc-Insulin and Other Mixtures of Zinc and Insulin in Diabetes Mellitus. By I. M. Rabinowitch, M.D., D.Sc., C.M., F.R.C.P. (Can.) of Montreal. Assistant Professor of Medicine and Lecturer in Pathological Chemistry, McGill University Medical School.

H. A. KONTOFF, M.D., *President,*
D. B. STEARNS, M.D., *Secretary.*

FAULKNER HOSPITAL CLINICAL MEETING

The next meeting will be held on Thursday afternoon, November 5, at 5:00 p. m. In addition to the usual clinical pathologic conference, Dr. Harlan F. Newton will talk on "The Practical Application of the Recent Advances in Thoracic Surgery."

All physicians are invited.

MASSACHUSETTS CONFERENCE OF SOCIAL WORK

Salle Moderne, Hotel Statler, Boston, 10:00 a. m., Saturday, November 7, 1936.

Health Developments in Massachusetts Under the Social Security Program

Presiding Officer— Miss Sophie C. Nelson, President, Massachusetts Central Health Council.

"Massachusetts Health Program Development"—Dr. Henry D. Chadwick, State Commissioner of Public Health.

"The Child Hygiene Program"—Dr. M. Luise Diez, Director, Division of Child Hygiene.

"The Program for Crippled Children"—Dr. Edward G. Huber, Assistant Director, Division of Administration.

Discussion.

This program was arranged by the Massachusetts Central Health Council.

WILLIAM HARVEY SOCIETY

The next meeting of the William Harvey Society will be held Friday, November 6, in the Auditorium of the Beth Israel Hospital, Boston, at 8:00 p. m.

PROGRAM

Speaker: Dr. Allen O. Whipple, Professor of Surgery, Columbia University.

Subject: "Recent Advances in Surgery of the Pancreas."

Chairman: Dr. James J. Hepburn, Professor of Surgery, Tufts College Medical School.

NEW ENGLAND HEART ASSOCIATION

The first meeting of the season of the New England Heart Association will be held in the auditorium of the Moseley Memorial Building of the Massachusetts General Hospital, Monday, November 9, 1936, at 8:15 p. m.

PROGRAM

1. Coronary Disease.
   - The Speed of Healing of Myocardial Infarcts. Drs. Jorge Salcedo-Salgar, G. Kenneth Mallory, and Paul D. White.
   - A New Record in Longevity after Coronary Thrombosis.
   - A Woman 22 Years Old with Myocardial Infarction. Dr. Paul D. White.
   - Coronary Disease Under the Age of Forty Years. Dr. R. E. Glendy.
2. The Effect of Inhalation of Tobacco Smoke on the Electrocardiogram. Dr. Ashton Graybiel.
3. The Heart Fifteen to Twenty Years after Severe Diphtheria. Dr. William Paul Thompson.
4. Electrocardiograms in Infancy, with Especial Reference to Lead 4. Dr. R. E. Glendy.
5. The Growing Importance of Cardiac Neurosis. Dr. Paul D. White.

All members of the New England Heart Association and interested physicians are invited to attend.

JAMES M. FAULKNER, M.D., *Secretary.*

BOSTON SOCIETY FOR THE ADVANCEMENT OF GASTROENTEROLOGY

On Tuesday, November 10, at 12:00 m. to 1:00 p. m., a clinical meeting will be held at the Boston City Hospital, Gastro-Intestinal Department in the Out-Patient Building. An interesting group of cases will be shown and an informal discussion will be held from a medical, surgical and roentgenologic point of view. Physicians and medical students are cordially invited to attend.

HARVARD MEDICAL SOCIETY

The next meeting of the Harvard Medical Society will be held in the Peter Bent Brigham Hospital Amphitheater (Shattuck Street Entrance), Tuesday evening, November 10, at 8:15 p. m.

PROGRAM

Presentation of Cases.

A Few High Lights in Harvard Medical History. By Samuel Eliot Morison, Professor of History, Harvard University.

Medical students and physicians are cordially invited to attend.

MARSHALL N. FULTON, M.D., *Secretary.*

A POSTPONED MEETING

The Trudeau Society meeting scheduled for October 29 at the New England Deaconess Hospital has been postponed to November 12. The program as published in this *Journal*, page 803, October 22, will be that for the postponed meeting.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

Wednesday, November 4, at 5:00 p. m.
Beverly Hospital

Clinic at 5:00 p. m.
Dinner at 7:00 p. m.
Speaker: Dr. Thomas B. Quigley of the Peter Bent Brigham Hospital, Boston.
Subject: "State Medicine in Sweden."

R. E. STONE, M.D., *Secretary.*

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

CALENDAR OF BOSTON DISTRICT FOR THE WEEK BEGINNING MONDAY, NOVEMBER 2, 1936

Tuesday, November 3—

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. Diseases and Injuries to the Hip Joint. Dr. John D. Adams.

Wednesday, November 4—

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. Hospital Case Presentation. Dr. S. J. Thannhauser.

†12 m. Clinico-Pathological Conference. Children's Hospital Amphitheater.

4 p. m. - 5 p. m. Surgical Pathological Conference, Dr. Cutler and Dr. Wolbach, Peter Bent Brigham Hospital.

Thursday, November 5—

*8:30 a. m. - 9:30 a. m. Clinic, Surgical Staff of the Peter Bent Brigham Hospital, at the Peter Bent Brigham Hospital.

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. Blood Clinic. Dr. Isidore Olef and Dr. H. G. Brugsch.

*3:30 p. m. Medical Clinic, Peter Bent Brigham Hospital. Dr. James H. Means.

*5 p. m. Faulkner Hospital Clinical Meeting.

Friday, November 6—

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. Protamine Insulin. Dr. Elliott P. Joslin.

8 p. m. William Harvey Society. Auditorium, Beth Israel Hospital, Boston.

Saturday, November 7—

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. Hospital Case Presentation. Dr. S. J. Thannhauser.

10 a. m. Massachusetts Conference of Social Work, Salle Moderne, Hotel Statler, Boston.

*10 a. m. - 12 m. Staff Rounds at the Peter Bent Brigham Hospital. Conducted by Dr. Henry A. Christian.

*Open to the medical profession.
†Open to Fellows of the Massachusetts Medical Society.

October 29—Massachusetts Society of Examining Physicians. Copley-Plaza Hotel, Boston, 6:30 p. m.

November 3-28—Boston Dispensary Medical Conference Program. See page 854.

November 5—Medical Clinic at the Peter Bent Brigham Hospital. See page 854.

November 5—Faulkner Hospital Clinical Meeting. See page 855.

November 6—William Harvey Society. See page 856.

November 7—Health Developments in Massachusetts. See page 803, issue of October 22.

November 7—Massachusetts Conference of Social Work. See page 856.

November 9—New England Heart Association. See page 856.

November 10—Boston Society for the Advancement of Gastroenterology. See page 856.

November 10—Harvard Medical Society. See page 856.

November 10—Greater Boston Medical Society. See page 855.

November 12—Trudeau Society. (Postponed Meeting.) See page 856.

November 12—Pentucket Association of Physicians. Hotel Bartlett, 95 Main Street, Haverhill, at 8:30 p. m.

November 16—One hundredth anniversary of the founding of the Army Medical Library, 7th Street and Independence Avenue, S. W., Washington, D. C.

November 17-20—Southern Medical Association. See page 803, issue of October 22.

November 24—Massachusetts Society for Mental Hygiene. See page 803, issue of October 22.

December 3-5—Annual Conference of the National Society for the Prevention of Blindness, Columbus, Ohio.

March 30 - April 2, 1937—First International Conference on Fever Therapy. Postponement notice. See page 52, issue of July 2.

April 21-24, 1937—American Society for Experimental Pathology. See page 1075, issue of May 21.

DISTRICT MEDICAL SOCIETIES

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

November 4—See page 856.

FRANKLIN DISTRICT MEDICAL SOCIETY

Will meet at the Weldon in Greenfield at 11 a. m. the second Tuesdays of November, January, March and May.

CHARLES MOLINE, M.D., Secretary.
Sunderland.

HAMPDEN DISTRICT MEDICAL SOCIETY

November 5—Censors meet for the examination of candidates at the Springfield Academy of Medicine, 20 Maple Street, Springfield, 4 p. m.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

November 18—Bear Hill Golf Club, Stoneham.
January 13, 1937—Bear Hill Golf Club, Stoneham.
March 16, 1937—Danvers State Hospital, Danvers.
May 11, 1937—Bear Hill Golf Club, Stoneham.

KENNETH L. MACLACHLAN, M.D., Secretary.
1 Bellevue Avenue, Melrose.

NORFOLK DISTRICT MEDICAL SOCIETY

November 5—The Censors will meet for the examination of candidates. Fee of $10.00 is payable at the time of examination. Application blanks may be obtained by writing the Secretary, furnishing name, address and name of school of graduation in medicine. Candidates whose applications are on file will receive proper notices.

November 24—8:15 p. m. The Beth Israel Hospital. Communications and Case Presentations by the Staff. Principal subject—Cardiology. Details of program to be announced.

January 19, 1937—8:15 p. m. The Peter Bent Brigham Hospital. Communications and Case Presentations by the Staff. Suggested title—"Abdominal Pain from the Medical and Surgical Standpoint." Details of program to be announced.

February 23, 1937—Time, place and details of program to be announced.

March 30, 1937—8:15 p. m. New England Deaconess Hospital. A Symposium on Diabetes entitled "A Survey of the Diabetic Work of the George F. Baker Clinic in the New England Deaconess Hospital." Communications and Case Presentations by the Staff. Drs. Elliott P. Joslin, Howard F. Root, Priscilla White, Alexander Marble and Allen P. Joslin.

May, 1937—Annual Meeting. Details to be announced.

FRANK S. CRUICKSHANK, M.D., Secretary.
1247 Beacon Street, Brookline.

PLYMOUTH DISTRICT MEDICAL SOCIETY

November 19—6 p. m. Goddard Hospital.
January 21, 1937—11 a. m. Bridgewater State Farm.
March 18, 1937—11 a. m. Brockton Hospital.
April 15, 1937—Annual Meeting. 11 a. m. Ducy Hospital.
May 20, 1937—11 a. m. Lakeville State Sanatorium.

FRED F. WEINER, M.D., Secretary.
231 Main Street, Brockton.

SUFFOLK DISTRICT MEDICAL SOCIETY

November 5—Censors' Meeting. Boston Medical Library, 8 Fenway, 4 p. m.

November 18, 1936—Boston Medical Library. 8:15 p. m. "Hydrocarbons and Cancer." Dr. M. J. Shear—U. S. P. H. Service. "Cancer Research. Recent Advances in Our Knowledge of Cancer." Dr. J. C. Aub. Discussion: Dr. J. W. Schereschewsky—U. S. P. H. Service and Dr. R. B. Greenough.

January 27, 1937—Boston Medical Library. 8:15 p. m. Joint Meeting with the Boston Medical Library. "Anthropology." Dr. Carleton S. Coon.

March 31, 1937—Boston Medical Library. 8:15 p. m. "Social Insurance—It Affects the Medical Profession." Dr. Charles E. Mongan. Discussion: Dr. Channing Frothingham.

April 28, 1937—Annual Meeting. Boston Medical Library. 8:15 p. m. "Problems in Surgical Diagnosis." Dr. Howard M. Clute.

CONRAD WESSELHOEFT, M.D., President,
CHARLES C. LUND, M.D., Secretary.

WORCESTER DISTRICT MEDICAL SOCIETY

November 5—At 4:30, in the rooms of the Worcester Medical Library, Inc., at 34 Elm Street, Worcester, will be held the fall Censors' meeting.

November 18. Note change of date. Grafton State Hospital, North Grafton, Mass. 6:15 p. m.: Dinner—complimentary by the hospital. 7:30 p. m.: Business session and scientific program.

December 9—St. Vincent Hospital, Worcester, Mass. 6:15 p. m.: Dinner—complimentary by the hospital. 7:30 p. m.: Business session and scientific program.

January 13, 1937—Worcester City Hospital, Worcester, Mass. 6:15 p. m.: Dinner—complimentary by the hospital. 7:30 p. m.: Business session and scientific program.

February 10, 1937—Worcester State Hospital, Worcester, Mass. 6:15 p. m.: Dinner—complimentary by the hospital. 7:30 p. m.: Business session and scientific program.

March 10, 1937—The Memorial Hospital, Worcester, Mass. 6:15 p. m.: Dinner—complimentary by the hospital. 7:30 p. m.: Business session and scientific program.

April 14, 1937—Worcester Hahnemann Hospital, Worcester, Mass. 6:15 p. m.: Dinner—complimentary by the hospital. 7:30 p. m.: Business session and scientific program.

May 6, 1937—At 4:30 in the rooms of the Worcester Medical Library, Inc., at 34 Elm Street, Worcester, will be held the spring meeting of the Board of Censors.

Wednesday Afternoon and Evening, May 12, 1937—Annual Meeting. Time and place for this meeting will be announced in an early spring issue of the Journal.

ERWIN C. MILLER, M.D., Secretary.
27 Elm Street, Worcester.

BOOK REVIEWS

Microbiology and Pathology for Nurses. Charles F. Carter. 682 pp. St. Louis: The C. V. Mosby Company. $3.00.

This elementary treatise covers a wide field in its 682 pages. Entirely inadequate for medical students or practitioners, it might well be serviceable as a review compend for the nurse, for whom it is primarily intended. It can be used by the student nurse, however, only when well supplemented by an adequate course of lectures which would serve both for orientation and elaboration on the more important points. In semiencyclopedic style, there is but little variation in space devoted to important and unimportant topics. Many of the illustrations are good; others are quite unsatisfactory, as in figure 29 one wonders how the rabbit had been kept still, and in figure 30, there is an excellent view of the shelves of chemicals, but only a blur represents the guinea pig which is supposedly the subject of the illustration.

Diseases of the Nose, Throat and Ear. For Practitioners and Students. Edited by A. Logan Turner and others. Fourth Edition, Revised and Enlarged. 473 pp. Baltimore: William Wood & Company. $6.00.

This edition of an already well-known book is excellent either as a reference book or as a textbook. It is admirably planned, wide in scope but clear and compact in style. The subject matter is well balanced and the revision of the various sections has been done with care and intelligence. The illustrations and diagrams are very good. On the whole this is one of the best textbooks in this branch of medicine.

Arthritis and Rheumatic Disease. Maurice F. Lautman. 177 pp. New York and London: McGraw-Hill Book Company, Inc. $2.00.

This book is an attempt to present the subject of rheumatic disease to the doctor, the nurse and the layman. It is supposed to represent up-to-date specific information. It emphasizes the importance of recognizing the potential arthritic, or the person "threatened with arthritis". Unfortunately nowhere in the book is there any mention made as to the basis for this statement,—that is the natural life course of the rheumatic patient is ignored. Obviously without a knowledge of the natural course one cannot speak specifically or authoritatively about altering the course of the disease or about recognition of one "threatened with arthritis". Many statements are made loosely: and the entire presentation appears to be offered as the work of one man.

The chapter headings outline the field the author attempts to cover. He begins with the query, "What Is Arthritis?" Chapters on etiology and symptoms follow. Focal infection, diet, mental aspects and treatment are discussed. Under treatment are chapters on rest, diet, massage and exercise, heat, hydrotherapy, vaccine treatment, care of the intestinal tract and climate. The final chapters deal with prevention, the relation of patient to physician, and summary and conclusions.

The book is a "one star" book. It is not recommended to the physician, the nurse or the layman. For the two former, other writers have said the same things better: for the last, the book says too much and does not say it convincingly. In other words, it is a somewhat mediocre recapitulation of current material.

Immunology. Noble Pierce Sherwood. 608 pp. St. Louis: The C. V. Mosby Company. $6.00.

The book is written as an introductory text primarily for medical students, but the recent work on immunology, especially in the United States, is reviewed so exhaustively that it may also serve for reference. The book has many advantages. The presentation is simple and easy to follow and the short clear definitions of the terms and concepts used in immunology will be helpful for the beginner. The modern points of view receive due treatment and the old classical discussions, which have lost their importance, are reduced to appropriate size. To the reviewer this spirit of modern conception is very attractive. However, he feels that the quest for simple definitions and the subdivision of the whole book into short independent paragraphs is overdone and the presentation is not sufficiently systematic. Certain parts of the book are entirely elementary, while other chapters present recent scientific work in a detail far exceeding the needs of a textbook. A better apportionment and arrangement of the material would be necessary to produce a well-rounded modern textbook of immunology.

A Preface to Nervous Disease. Stanley Cobb. 173 pp. Baltimore: William Wood & Company. $2.50.

For many years Professor Cobb has taught neuropathology to the second-year students at the Harvard Medical School. His lectures have been issued in the form of a synopsis. This book now expands these outlines into a clear-cut introduction to diseases of the nervous system. Although short, it is sufficiently full to give the student a clear idea of our knowledge of neuropathology and the more recent advances in this field. Not only the actual histology but the function of the nervous system is stressed, a broad point of view which has the entire sympathy of the reviewer. Much of the work quoted on such subjects as brain tumors, the cerebral circulation and the cerebrospinal fluid has originated in Boston and this work is fully recognized by the author. He has not failed, moreover, to include the important advances elsewhere.

The book will form a useful addition to those introductory texts which are so useful to medical students.